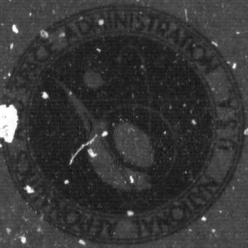


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NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION



(NASA-TM-85346) MICROCIRCUIT RADIATION
EFFECTS DATABASE (NASA) 420 P HC A18/1F A01
CSCL 05B

N83-27903

G3/82

Unclass
09056

NASA-TM-85346

Computer Management Branch
Goddard Space Flight Center
Greenbelt, Maryland

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MICROCIRCUIT RADIATION EFFECTS DATABASE

FEBRUARY 1983

PREPARED BY: SPERRY DATA MISSION
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NASA/GODDARD SPACE FLIGHT CENTER
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INTRODUCTION

THE PURPOSE OF THIS DATABASE IS TO COLLECT RADIATION TEST DATA SUBMITTED BY MANY TESTERS AND TO SERVE AS A REFERENCE FOR ENGINEERS WHO ARE CONCERNED WITH AND HAVE SOME KNOWLEDGE OF THE EFFECTS OF THE NATURAL RADIATION ENVIRONMENT ON MICROCIRCUITS. IT CONTAINS RADIATION SENSITIVITY RESULTS FROM GROUND TESTS AND IS DIVIDED INTO TWO SECTIONS. SECTION A LISTS TOTAL DOSE DAMAGE INFORMATION, AND SECTION B LISTS SINGLE EVENT UPSET CROSS SECTIONS, I.E., THE PROBABILITY OF A SOFT ERROR (BIT FLIP) OR OF A HARD ERROR (LATCHUP).

MANY USERS AND TESTERS IN THE AEROSPACE COMMUNITY WERE SOLICITED TO SUBMIT APPROPRIATE DATA WHICH WAS GENERATED SINCE 1975. DATA WERE REVIEWED AND REFORMATTED AS PRESENTED HEREIN SO THAT ALL DATA WOULD APPEAR IN A UNIFORM MANNER, AND TO IDENTIFY AND EMPHASIZE SIGNIFICANT DETAILS. THERE WAS NO FURTHER REDUCTION OR ANALYSIS OF DATA PERFORMED OTHER THAN TO CALCULATE THE MEAN AND STANDARD DEVIATION VALUES. IF THE DATA WERE NOT ALREADY SO PRESENTED. MUCH OF THE DATA RECEIVED WAS QUESTIONABLE OR OF UNCERTAIN WORTH BECAUSE OF POOR PART IDENTIFICATION OR BECAUSE DETAILS OF THE TEST CONDITIONS WERE INCOMPLETE. CLEARLY MANY TESTS WERE CONDUCTED TO ANSWER VERY SPECIFIC QUESTIONS, SUCH AS WHETHER A DEVICE WAS STILL FUNCTIONAL AFTER A GIVEN DOSE. ALTHOUGH SOME OF THE DATA SUBMITTED WAS NOT USABLE, IF IT APPEARED TO HAVE ANY UTILITY AT ALL, IT WAS INCLUDED, EVEN THOUGH EVENTUAL USERS MIGHT HAVE SOME QUESTIONS. SOME BACKTRACKING TO THE SUBMITTERS OF DATA WAS DONE IN ORDER TO VALIDATE OR CLARIFY AMBIGUOUS DATA, BUT SCHEDULE AND FUNDING LIMITED HOW MUCH OF THIS COULD BE DONE.

A FINAL COMMENT IS THAT IT IS ASSUMED THAT THE USER OF THIS DATABASE HAS SOME EXPERIENCE IN, AND UNDERSTANDING OF, RADIATION EFFECTS ON MICROCIRCUITS. WHEN THE UNCERTAINTIES OF DATA VALIDITY OR COMPREHENSIVENESS NOTED ABOVE ARE COUPLED WITH THE WIDELY KNOWN VARIATIONS IN PRODUCT HARDNESS (DUE TO DIFFERING MANUFACTURING PROCESSES AND TO THE EFFECTS OF MINOR CHANGES WITHIN A PROCESS), CAUTION SHOULD BE USED IN INTERPRETING THE DATA FOR USE IN A GIVEN APPLICATION. A LAYMAN IN THE FIELD ASSUMES SOME RISK IF THESE DATA ARE SUPERFICIALLY APPLIED, OR ARE MISAPPLIED BY NOT CONSIDERING THE VARIATIONS POSSIBLE IN THE MANUFACTURED PRODUCT IN ITS CIRCUIT APPLICATION AND IN ITS USE ENVIRONMENT. THIS CAVEAT IS ESPECIALLY TRUE FOR THE SINGLE EVENT UPSET DATA OF SECTION B. THE UPSET LATCHUP RATES GIVEN FOR EACH DATA SET ENTRY (RECORD) ARE NOT THE TRUE DEVICE ERROR RATES. RATHER, SEVERAL DATA SETS MAY BE NECESSARY TO DETERMINE THE THRESHOLD LEVEL FOR DEVICE INFORMATION. THAT INFORMATION, TOGETHER WITH A DETAILED BREAKDOWN OF THE COSMIC RAY SPECTRUM, MUST THEN BE FOLDED INTO AN ANALYTICAL MODEL IN ORDER TO FINALLY DETERMINE THE ACTUAL ERROR RATES FOR THE DEVICE IN A GIVEN APPLICATION ENVIRONMENT (ORBIT).

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DEFINITION OF SYMBOLS

INCIDENT ANGLE (IN DEGREES) OF PARTICLE BEAM ON DEVICE UNDER TEST; REFERENCE IS NORMAL TO THE PLANE OF THE CHIP
ANOMALOUS

ARGON

AVERAGE

SUPPLY VOLTAGE VALUE DURING IRRADIATION

SUPPLY VOLTAGE VALUE AND INPUT/OUTPUT CONTROL CONTROLS DURING IRRADIATION

COBALT-60

CONTINUED

CUMULATIVE TOTAL ABSORBED DOSE IN RAD'S

DELTA (CHANGE) IN PARAMETER

NAME OF COMPANY WHICH PERFORMED TESTS

REpetition OF DATA ABOVE SYMBOL

ELECTRONS

ENERGY OF THE INCIDENT PARTICLE BEAM

TEST UPSET RATE IN UPSET/PARTICLE/SQ. CM./(MEMORY) BIT

(METAL) EVAPORATION RUN

NUMBER OF PARTICLE INCIDENT ON THE DEVICE UNDER TEST AND USED IN COMPUTING THE CROSS SECTIONS FOR A DATA SET (RECORD)

ANGLE

ANOM

AR

AVG

BIAS (SINGLE EVENT UPSET SECTION)

BIAS (TOTAL DOSE SECTION)

CO-60

CONT

CUM. DOSE (RAD'S)

D (PARAMETER)

DATA SOURCE

"(DITTO)

EL

ENERGY

ERROR CROSS SECTION

ER

FLUENCE

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FUNCTION	APPLICATION PURPOSE
GENERIC PART NUMBER	BASIC PART TYPE OF NUMERICAL ORDER
GND	GROUND
ION	IDENTIFICATION OF CHARGED PARTICLE AS TO ELEMENT TYPE
IRRAD	IRRADIATION
K	POWER OF 10 RAISED TO THE 3
KR	KRYPTON
LATCH CROSS SECTION	TEST LATCHUP RATE IN LATCH/PARTICLE/SQ. CM. / CHIP
LDC	LOT DATE CODE: DATE OF MANUFACTURE OF FABRICATION LOT FIRST 2 NUMBERS: YEAR LAST 2 NUMBERS: WEEK OF YEAR E.G.: 7912 = 12TH WEEK OF 1979
MANUFACTURER	MANUFACTURING COMPANY OF TEST GROUP
MEAN	MEAN VALUE OF TEST GROUP FOR MEASURED PARAMETER
MEG	POWER OF 10 RAISED TO THE 6
MEV	MILLION ELECTRON VOLTS
N	NEUTRONS
N/C	NO CONNECTION
NE	NO ERRORS
(N) FAIL: (N) FAL (N) F	PARAMETER WAS NOT WITHIN SPECIFICATION FOR N (A NUMBER) OF DEVICES
NL	NO LATCHUPS

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NO. OF PARTS	NUMBER OF DEVICES USED IN COMPUTING CROSS SECTIONS
(N) PASS, (N) PAS,	PARAMETER WAS WITHIN SPECIFICATION FOR N (A NUMBER) DEVICES
(N) P	
N/SQ CM	NEUTRONS PER SQUARE CENTIMETER
O	OXYGEN
+OR	OUT OF RANGE IN THE POSITIVE
P+	PROTON
PARAMETERS	LISTING OF SPECIFIC PARAMETERS MEASURED
PART NUMBER	FULL PART IDENTIFICATION NUMBER
PART QTY.	NUMBER OF DEVICES IN TEST GROUP
PREV	PREVIOUS
RADS	ABSORBED DOSE
RAD TYPE	TYPE OF IRRADIATION SOURCE
REC	RECORD
RECORD	DATABANK FILE NUMBER FOR DATA SET
REF. NO.	CATALOGUE REFERENCE NUMBER OF SOURCE DATA
RUNS	NUMBER OF INDIVIDUAL TEST RUNS USED IN COMPUTING CROSS SECTIONS FOR A DATA SET (RECORD)
SD	STANDARD DEVIATION VALUE OF TEST GROUP FOR MEASURED PARAMETER
SPECIFICATION	PROCUREMENT SPECIFICATION IDENTIFICATION
TECHNOLOGY	MANUFACTURING PROCESS
TYP	TYPICAL
UNK	UNKNOWN
X-	LESS THAN X
X+	MORE THAN X

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MICROCIRCUIT RADIATION EFFECTS DATABASE
SECTION A: TOTAL DOSE TESTS

SORT: GENERIC PART TYPE: RECORD ID NUMBER

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
0002	CURRENT AMPLIFIER	BIPOLAR	25-1	40

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LH0002H		AEROJET

LDC	RAD.	TYPE	PART QTY.	BIAS
7718	CO-60		5	UNK.

CUM. DOSE (RADS) :	0		18K		100K		420K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS								
VIO	SPASS		SPASS		SPASS		SPASS	
VO+ (MAX)	SPASS		SPASS		SPASS		SPASS	
VO- (MAX)	SPASS		SPASS		SPASS		SPASS	
IIO	SPASS		SPASS		SPASS		SPASS	
IS	SPASS		SPASS		SPASS		SPASS	
G	SPASS		SPASS		SPASS		SPASS	
ZOUT	SPASS		SPASS		SPASS		SPASS	
REMARKS :								

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
0002	CURRENT AMPLIFIER	HYBRID	805-14	580

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LH0002		TI

LDC	RAD.	TYPE	PART	QTY.	BIAS
7921	C0-60		10	UNK.	

CUM. DOSE (RADS)	0		12.5K		25K		50K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
-VOS	11.50	5.201	11.85	5.212	11.38	5.218	11.66	5.210	11.37	5.206
IOS	.540	.705	.496	.720	.620	.731	.899	.754	1.261	.849

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
0032	ULTRA FAST OP AMP	FET	1035	5370

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LH0032		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7950	CO-60	5	V+=15V; V-=-15V.

CUM. DOSE (RADS):	O	50K		100K		200K		500K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
VOS	MV	2.460	0.329	2.22	0.563	2.320	0.311	1.920	0.585
IQS	PA	-0.60	7.995	6.240	9.802	6.600	17.09	43.60	65.36
IB	PA	-31.6	45.85	-139.	43.33	-321.	43.62	-856.	56.90
AVOL (1KHZ)	DB	64.92	0.763	64.92	0.763	64.60	0.969	64.34	0.981
+SLEW	V/US	381	30	NSC*	NSC*	NSC*	NSC*	NSC*	NSC*
-SLEW	V/US	355	16	NSC*	NSC*	NSC*	NSC*	NSC*	NSC*
								374	18
								343	13

REMARKS: * NSC = NO SIGNIFICANT CHANGE FROM PREVIOUS VALUE.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
0033	AMPLIFIER	BIFET	24-2	20

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LH0033	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7913	CO-60	8	V+=15V, V-=-15V, INPUT=5V

CUM. DOSE (RADS):	O	30K		100K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
D IOS	MA	-525	.406	0.363	2.292	12.03	35.71
D IIB	NA	-37.5	24.49	-36.7	24.69	-31.7	25.09
D GAIN (1V)		-016	0.031	0.006	0.031	0.006	0.031
D GAIN (4V)		-007	0.023	0.003	0.005	-004	0.014
D GAIN (9V)		0.002	0.001	0.002	0.001	0.001	0.001

REMARKS:

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 GENERIC PART NUMBER: 02
 FUNCTION: PREC. VOLT REFERENC
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 805-13 570

 MANUFACTURER: PMI
 PART NUMBER: REFO2
 SPECIFICATION: TI
 DATA SOURCE: TI

LDC RAD. TYPE PART QTY. BIAS
 8049 CO-60 6 UNK.

CUM. DOSE (RADS): 0
 12.5K 25K 50K 100K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 LOAD REG MV 2.083 .0753 2.133 .0949 2.333 .0931 2.275 .1099 2.283 .1033
 V0 V 5.002 .0061 5.004 .0061 5.005 .0061 5.009 .0068 5.010 .0074
 LINE REG MV 4.150 .5320 4.550 .5357 5.533 .5698 6.317 1.222 7.283 2.125

REMARKS:

 GENERIC PART NUMBER: 04
 FUNCTION: COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 805-17 610

 MANUFACTURER: PMI
 PART NUMBER: COMP-04
 SPECIFICATION: TI
 DATA SOURCE: TI

LDC RAD. TYPE PART QTY. BIAS
 7924 CO-60 3 UNK.

CUM. DOSE (RADS): 0
 12.5K 25K 50K 100K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 -(IB+) * NA 28.5 7.937 75.5 8.404 146.6 14.10 332.1 45.3 770.0 121.5
 -(IOS) * NA -.733 1.173 1.588 2.169 8.467 8.827 37.96 14.43 157.8 24.3
 V0S MV -.021 .5198 .0425 .5519 .3450 .5969 1.774 .7240 6.008 1.039
 ISINK MA 6.333 .2462 8.550 .3572 7.108 .4100 5.258 .4358 3.226 .4984

REMARKS: *NEGATIVE OF PARAMETER VALUE WAS USED TO CONSERVE SPACE.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
05	OP AMP	BIPOLAR	1009	5080

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PMI	OP-05EJ		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7937	CO-60	5	V+=15V, V=-15V, VIN=IV(P-P)1KHZ, RIN=10K, *

CUM. DOSE (RADS) :		0		50K		100K		300K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL	1HZ DB	109.5	0.396	108.5	0.526	107.7	0.891	106.2	1.761	106.4	1.524
AVOL	1KHZ DB	56.48	0.896	56.00	0.935	55.80	0.982	55.30	1.202	54.90	1.409
AVOL	5KHZ DB	41.52	1.246	41.08	1.266	40.90	1.371	40.16	1.742	39.60	1.981
10S	5KHZ NA	0.022	0.577	-0.38	1.593	-0.77	3.012	1.508	5.418	2.617	6.363
IB	5KHZ NA	-0.31	0.539	7.576	4.626	25.84	15.24	96.98	58.54	115.9	68.41
VDS	5KHZ MV	-0.02	0.087	-0.11	0.043	-0.12	0.044	-0.14	0.044	-0.17	0.056

REMARKS: *RF=100K, NON-INV INPUT TO GND VIA 9.1K, VOUT TO GND VIA 5K.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
07	OP AMP (LOW OFFSET)	BIPOLAR	25-2	30

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PMI	OP07A		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7733	C0-60	4	UNK.

CUM. DOSE (RADS):		0		12.5K		42.5K		133K		253K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	***	5PASS		5PASS		5PASS		5PASS		5PASS	
IB	NA	0.33	** .18	0.64	** .27	10.1	** .96	11.3	** 10+	11.7	** 10+
(SPEC=2 NA)		*	.48	.99			** 10.3		** 11.6		** 12.7
IIO	NA	0.25		0.28	** .12	0.88	** .40	4.5	** 2.9	6.1	** 0.7
(SPEC=2 NA)				.44			* 1.4		* 6.5		* 10.3
GBW	KHZ	930	** 840	860	** 765	695	** 610	615	** 460	665	** 515
			* 1030		* 960		* 785		* 760		* 810
REMARKS: ***PARAM. IQ PASSED ALL DGSES.											
***MAX. **MIN.											

REMARKS: ***PARAM. IQ PASSED ALL CGSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
07	OPERATIONAL AMP.	BIPOLAR	401-6 60

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PMI	OP-07		INSAT PCC 860

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	V+=+7.5V, V=-7.5V (DURING IRRAD. & ELECT. TESTS).

CUM.DOSE(RADS):	0	1MEG	LIMITS*
PARAMETERS	MEAN	SD	MEAN SD MEAN SD
VDS	MV	.9800	28.94 75.0
IB+	NA	17.74	11.86 3.0
IB-	NA	17.82	11.96 3.0
IOS	NA	.6800	.4324 2.8

REMARKS: *IN THIS COLUMN ARE THE MANUFACTURER'S SPECIFIED LIMITS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
07	OP AMP	BIPOLAR	1010 5090

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
P.M.I.	OP-07EJ		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7951	CO-60	5	V+=15V, V=-15V, VIN=IV(P-P)1KHZ, RIN=10K, *

CUM. DOSE (RADS):	0		50K		100K		300K		1MEG	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
1HZ DB	111.1	0.483	108.9	1.703	106.9	3.384	104.0	5.340	103.2	3.237
1KHZ DB	57.36	2.046	55.50	1.432	54.96	1.050	54.16	0.723	54.22	0.804
1AVOL DB	42.46	2.620	40.30	2.162	41.96	5.229	38.36	1.256	38.68	1.264
5KHZ DB	-0.54	0.702	-0.99	1.146	-1.81	3.198	-2.42	6.917	-7.59	14.98
1IOS	-0.20	0.971	8.486	6.811	22.74	19.88	72.92	83.96	119.3	144.2
1IB	0.022	0.030	0.001	0.028	-0.02	0.062	-0.02	0.084	-0.11	0.198
1VDS										
MV										

REMARKS: *RF=100K, NON-INV INPUT VIA 9.1K TO GND, RL=5K.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
08	D/A CONVERTER	BIPOLAR	1032 5340

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA0801		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7818	CO-60	16	SEE RECORD 5344 FOR BIAS INFORMATION.

CUM. DOSE(RADS): 0

PARAMETERS	100K		300K		500K			
	MEAN	SD	MEAN	SD	MEAN	SD		
VOUT(OFF)* MV	.6475	2.119	.6867	.4681	6.913	5.823	21.15	14.68
VOUTC(OFF)* V	9.893	.0209	9.764	.0288	9.669	.0469	9.599	.0529
VOUT(B8 HI)MV	38.22	2.352	36.10	2.730	36.29	4.606	44.60	9.784
VOUTC(B8 HI)V	9.857	.0209	9.732	.0281	9.642	.0434	9.578	.0505
VOUT(B7 HI)MV	75.77	3.734	70.87	4.118	67.78	5.622	73.55	8.701
VOUTC(B7 HI)V	9.823	.0272	9.698	.0282	9.613	.0409	9.558	.0437

REMARKS: *VOUT ON 5K@PIN4; VOUTC=COMPL(VOUT) @PIN2: ()=INPUT. **CONT. ON 5341.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
08	D/A CONVERTER	BIPOLAR	1032 5341

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA0801		

LDC	RAD. TYPE	PART QTY.	BIAS
			SEE RECORD 5344.

CUM. DOSE(RADS): 0

PARAMETERS	100K		300K		500K			
	MEAN	SD	MEAN	SD	MEAN	SD		
VOUT(B6 HI) V	.1548	.0046	.1502	.0047	.1473	.0055	.1520	.0080
VOUTC(B6 HI)V	9.740	.0220	9.620	.0298	9.536	.0405	9.479	.0432
VOUT(B5 HI) V	.3088	.0026	.3010	.0030	.2933	.0047	.2958	.0074
VOUTC(B5 HI)V	9.586	.0209	9.472	.0287	9.391	.0384	9.343	.0410
VOUT(B4 HI) V	.6173	.0043	.6066	.0047	.6003	.0051	.6030	.0073
VOUTC(B4 HI)V	9.278	.0201	9.168	.0262	9.085	.0370	9.036	.0402

REMARKS: CONTINUATION FROM RECORD 5340. CONTINUED ON RECORD 5342.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
08	D/A CONVERTER	BIPOLAR	1032	5342

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA0801		

LDC	RAD. TYPE	PART QTY.	BIAS

SEE RECORD 5344.

PARAMETERS	0		100K		300K		500K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOUT(B3 HI) V	1.239	.0046	1.223	.006	1.212	.007	1.213	.009
VOUTC(B3 HI) V	8.658	.019	8.553	.024	8.475	.0344	8.430	.0366
VOUT(B2 HI) V	2.484	.0068	2.458	.0077	2.441	.0089	2.437	.0011
VOUTC(B2 HI) V	7.412	.0157	7.318	.0221	7.251	.0327	7.206	.0331
VOUT(B1 HI) V	4.984	.0107	4.942	.0141	4.892	.0446	4.899	.0224
VOUTC(B1 HI) V	4.913	.0121	4.836	.0167	4.785	.0410	4.775	.0608

REMARKS: CONTINUATION FROM RECORD 5341. CONTINUED ON RECORD 5343.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
08	D/A CONVERTER	BIPOLAR	1032	5343

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA0801		

LDC	RAD. TYPE	PART QTY.	BIAS

SEE RECORD 5344.

PARAMETERS	0		100K		300K		500K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOUT(FS*) V	9.895	.0223	9.773	.0292	9.672	.0384	9.624	.0459
VOUTC(FS) MV	2.861	2.496	1.406	2.853	5.898	4.572	8.921	5.571
I(FS) UA	-.01	0.000	.0088	.0048	.0606	.0331	.0613	.0203
VREF MV	54.60	21.16	77.92	13.17	63.24	13.38	52.86	12.82
TPLH NS	59.71	1.660	57.15	2.177	64.61	2.773	67.14	2.807
TPLH NS	63.98	7.855	59.72	1.618	62.91	2.088	62.53	2.535

REMARKS: CONT FROM REC 5342. *FS=FULL SCALE. CONTINUED ON RECORD 5344 (BIAS).

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
08	D/A CONVERTER	BIPOLAR	1032 5344

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA0801		

LDC	RAD. TYPE	PART QTY.	BIAS
			PINS: 13-15V; 14 VIA 5K TO 15V; 3-15V; 15 VIA 5K

CUM.DOSE(RADS): 0			
PARAMETERS	MEAN	SD	MEAN SD

REMARKS: CONT FROM REC 5343. *TO -15V; 5-12 5V; 2.4 VIA 1K TO 5V; 1 5V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
082	DUAL FET OP AMP	BIFET	1-145 10

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
EXAR INTEGRATED	XR082		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
8024	2.5MEV EL	5	VCC=15V, VEE= -15V

CUM.DOSE(RADS): 0				30K		150K		300K		500K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
VDS	MV	.1290	.1280		.1280		.1280		.1280		
IOS	NA	.1300	.1330		.1300		.1280		.1070		
IB	NA	.1270	.1270		.1270		.1400		.1430		
+AVOL	DB	110.0	FAIL								
-AVOL	DB	108.0	FAIL								

REMARKS:

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REF. NO. RECORD
805-15 620

DATA SOURCE	TI
1. FBI	1
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8. FBI	1
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100. FBI	1

BIAS

UNK:

	MEAN	SD
3	93.7	11.22
3	145.9	65.4
3	.586	.8704
3	-.484	6.555

ALL NEGATIVE)

EF. NO.	RECORD
4-44	1220

ATA SOURCE

OCKWELL

-----REST BITS GND

	MEAN	SD
--	------	----

REMARKS:

GENERIC PART NUMBER: 100

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
1001	8-BIT A/D CONVERTER	TTL	1-144 70

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TRW	TDC1001J		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7802C	CO-60	2	VCC=5V, VEE=-5V.

CUM. DOSE (RADS):	0	75K		250K		750K		2.5 MEG	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
ICC(MAX) * MA	10.1	11.0		12.5		10.5		17.5	
IREF(MAX) * NA	69	165		305		460		560	
IIH(MAX) * UA	3.1	4.6		6.4		9.1		11.0	
DVOS(MAX) * MV	4.35	3.2		8.1		13.5		23.2	

REMARKS: * MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE).BIAS SAME AS ABOVE.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
101	OP AMP	BIPOLAR	1-39 160

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMI	LM101		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
UNK	CO-60	3	UNK.

CUM. DOSE (RADS):	0	75K		250K		750K		2.5M	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.2	.1555	.55	.4039	1.12	.7390	2.2	1.150
DIOS NA		1.	.6429	3.2	2.258	8.	5.272	12.8	7.378
DIB NA		5.	1.132	25.	.3150	70.	6.260	150.	25.92
+GAIN DB		117.	106.5	5.586	103.	7.596	91.	4.772	84.5
-GAIN DB		115.	116.	12.63	104.	5.452	94.	6.609	82.

REMARKS:

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 GENERIC PART NUMBER: 101
 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-40 170

 MANUFACTURER: NATIONAL SEMI.
 PART NUMBER: LM101
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 3 UNK.

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD 75K 250K 750K 2.5MEG
 DVOS MV .05 .0100 .15 .0351 .35 .0849 .83 .1071
 DIOS NA .4 .8640 1.06 2.222 1.36 4.399 .03 8.695
 DIB NA 8. .2093 26. 1.179 60. 3.389 122. 3.648
 +GAIN DB 123.0 110.7 1.535 109.2 .8300 97.6 .9819 90.8 1.648
 -GAIN DB 111.0 129. 9.787 109.5 2.554 98.5 1.417 92. .9372

REMARKS:

 GENERIC PART NUMBER: 101
 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-41 180

 MANUFACTURER: NATIONAL SEMI.
 PART NUMBER: LM101
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 UNK. 2.5MEV EL 4 UNK.

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD 75K 150K 300K 600K
 DVOS MV .04 .1173 .02 .2351 .148 .2883 .038 .4727
 DIOS NA .5 .2961 1.3 .7837 1.8 2.925 5.1 3.878
 DIB NA 8. 1.181 15.5 2.180 30.5 3.560 54.5 7.615
 +GAIN DB 117. 117.2 7.122 106. 1.348 FAIL 109.3 2.251
 -GAIN DB 115.4 4.059 125. 4.659 FAIL

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
101	OP AMP	BIPOLAR	31 1130

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AMD101A		IRT

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	UNK	V+=15V, V-=GND, VIN-=7.5V, VIN+=7.1V, VO 4K TO GND

CUM.DOSE(RADS):											
		0		100K		300K		500K		1M	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D IT	MA	2.110		0.05		-0.16		-0.22		-0.32	
D I-	MA	2.130		-0.06		-0.16		-0.22		-0.32	
D VOS	MV	1.05		0.03		0.12		0.21		0.37	
D IOS	NA	4.05		0.56		0.86		1.07		1.81	
D IB	NA	49.2		9.5		29.4		32.0		54.1	
D AV	DB	107		1.0		2.0		2.0		13.0	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
101	OP AMP	BIPOLAR	31 1140

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
INTERSIL	LM101AH		IRT

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	8	V+=15V, V-=GND, VIN-=7.5V, VIN+=7.1V, VO 4K TO GND

CUM.DOSE(RADS):											
		0		35K		100K		300K		1M	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV			-.032	.0145	-.188	.1830	-.347	.2620	-.748	.7330
D IOS	NA			-.043	.2450	-.465	.6400	-.846	1.290	-3.17	3.920
D II	NA			6.09	1.590	12.30	3.000	31.00	5.000	83.50	11.56
D AV	DB			3.260	11.30	2.360	5.210	7.43	8.54	-4.51	6.860

REMARKS:

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 GENERIC PART NUMBER: 101

 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 31 1150

 MANUFACTURER: ADVANCED MICRO
 PART NUMBER: LM101AH
 SPECIFICATION: IRT CORP
 DATA SOURCE: IRT CORP

LDC RAD. TYPE PART QTY. BIAS
 7538 CO-60 5 V+=15V, V-=GND, VIN=7.5V, VIN+=7.1V, VO 4K TO GND

CUM. DOSE (RADS): 0
 13K 52K 170K 360K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIO MV 0.700 0.700 0.700 0.600 0.300
 IIO NA 1.000 1.900 5.2 9.5
 IB NA 44.00 53.00 61.00 70.00
 IQ MA 2.000 2.000 1.900 1.900
 GBW KHZ 1241 1276 1164 1085

REMARKS:

 GENERIC PART NUMBER: 101

 FUNCTION: OP-AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 24-13 1370

 MANUFACTURER: FAIRCHILD
 PART NUMBER: LM101AH
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: ROCKWELL

LDC RAD. TYPE PART QTY. BIAS
 8008A CO-60 8 V+=15V, V-=15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE (RADS): 0
 30K 100K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD
 D VOS MV -.395 .224 -5.39 1.372 -83.4 47.21
 D IOS NA 1.159 2.679 -7.33 6.872 -269. 148.7
 D IIB NA 50.74 18.01 135.3 38.35 326.8 56.50

REMARKS:

 GENERIC PART NUMBER: 101

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
101	OP-AMP	BIPOLAR	24-12	1380

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM101AH	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8022	CO-60	4	V+=15V, V--15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE (RADS):	O	30K		100K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
D VDS	MV	-0.001	0.008	-0.269	0.040	-0.911	0.2220
D IIB	NA	13.00	2.606	32.83	3.599	78.28	11.38

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
101	OP-AMP	BIPOLAR	24-11	1390

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM101AH	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8023	CO-60	4	V+=15V, V--15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE (RADS):	O	30K		100K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
D VDS	MV	-0.012	0.019	-0.064	0.009	-0.402	0.050
D IOS	NA	0.004	0.110	0.222	0.278	0.603	1.241
D IIB	NA	14.00	0.294	28.55	0.532	54.93	2.998

REMARKS:

 GENERIC PART NUMBER: 101

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
101	OP-AMP	BIPOLAR	24-10	1400

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM101AH	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8016	CO-60	4	V+=15V, V--=-15V, NONINV-INPUT=5V, INV-IN=OUT

CUM.DOSE(RADS):		0		30K		100K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV	-0.025	0.017	-0.068	0.030	-1.45	0.372			
D IOS	NA	-0.059	0.210	-0.662	0.438	-4.34	1.552			
D IIB	NA	14.15	0.057	29.00	1.016	63.55	2.645			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
101	OP-AMP	BIPOLAR	24-9	1410

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
GENERAL ELECTRIC	LM101CHIP	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	8	V+=15V, V--=-15V, NONINV-INPUT=5V, INV-IN=OUT

CUM.DOSE(RADS):		0		30K		100K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV	-0.001	0.022	-0.006	0.137	-0.028	0.427			
D IOS	NA	-0.168	0.477	-0.343	1.527	0.590	2.945			
D IIB	NA	12.09	1.153	37.99	2.665	90.80	4.353			

REMARKS:

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GENERIC PART NUMBER: 101

GENERIC PART NUMBER		FUNCTION	TECHNOLOGY	REF. NO.	RECORD	
101		OP-AMP	BIPOLAR	24-8	1420	
MANUFACTURER		PART NUMBER	SPECIFICATION	DATA SOURCE		
NATIONAL		LM101AF	COMMERCIAL	ROCKWELL		
LDC	RAD. TYPE	PART QTY.	BIAS			
8011	CO-60	8	V+=15V, V=-15V, NONINV-INPUT=5V, INV-IN=OUT			
CUM. DOSE (RADS):			0	30K	100K	300K
PARAMETERS			MEAN	SD	MEAN	SD
D VOS	MV		-.004	0.017	-.222	0.110
D IOS	NA		-.212	0.360	-.794	0.695
D IIB	NA		15.90	3.519	49.20	10.48

REMARKS:

GENERIC PART NUMBER		FUNCTION	TECHNOLOGY		REF.NO.	RECORD		
101		OP-AMP	BIPOLAR		24-7	1430		
MANUFACTURER		PART NUMBER	SPECIFICATION		DATA SOURCE			
FAIRCHILD		LM101AF	COMMERCIAL		ROCKWELL			
LDC	RAD. TYPE	PART QTY.	BIAS					
8008	CO-60	4	V+=15V, V-=-15V, NONINV-INPUT=5V, INV-IN=OUT					
CUM.DOSE(RADS):		0	30K		100K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	
D VOS	MV	-.174	0.199	-.219	0.163	-.444	0.849	
D IOS	NA	0.718	0.764	1.707	2.252	2.508	3.626	
D IIB	NA	15.85	8.256	34.23	18.30	60.58	26.02	

REMARKS:

GENERIC PART NUMBER: 101

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GENERIC PART NUMBER 101
FUNCTION OP-AMP
TECHNOLOGY BIPOLAR
REF. NO. RECORD 24-6 1440

MANUFACTURER FAIRCHILD
PART NUMBER LM101AF
SPECIFICATION COMMERCIAL
DATA SOURCE ROCKWELL

LDC RAD. TYPE PART QTY. BIAS
8002 CO-60 4 V+=15V, V-=-15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE(RADS): 0
PARAMETERS MEAN SD 30K MEAN SD 100K MEAN SD 300K
D VDS MV 0.011 0.065 -1.09 1.138 -7.41 7.080
D IOS NA 2.091 4.784 4.435 10.38 -6.80 24.01
D IIB NA 43.48 10.49 112.9 33.02 202.4 86.42

REMARKS:

GENERIC PART NUMBER 101
FUNCTION OP AMP
TECHNOLOGY BIPOLAR
REF. NO. RECORD 1004 5030

MANUFACTURER AMD
PART NUMBER LM101AH
SPECIFICATION TRW

LDC RAD. TYPE PART QTY. BIAS
7945 CO-60 5 V+=15V, V-=-15V, VIN=1V(P-P) 1KHZ, RIN=10K, RF=100K

CUM. DOSE(RADS): 0
PARAMETERS MEAN SD 50K MEAN SD 100K MEAN SD 300K MEAN SD 1MEG
AVOL 1HZ DB 111.9 4.61 112.7 4.77 112.8 4.49 113.3 2.50 114.3 2.78
AVOL 1KHZ DB 60.34 1.19 60.16 1.20 59.94 1.20 59.44 1.12 58.28 0.88
AVOL 5KHZ DB 46.10 1.21 46.00 1.27 45.86 1.26 45.14 1.18 43.98 1.17
IOS NA 0.332 0.779 0.307 0.817 0.338 0.804 0.258 0.820 -0.02 1.094
IB NA 38.45 6.06 44.45 6.55 47.95 6.92 56.35 7.99 71.97 8.82
VDS MV 0.062 0.109 0.102 0.090 0.134 0.102 0.228 0.267 0.453 0.556

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
101	OP AMP	BIPOLAR	1049 5510

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM101A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7945D	CO-60 + N*	10	V+=15V, V--15V, NONINV-INPUT TO GND VIA 6.8K, **

CUM. DOSE (RADS):		O		200K+N*	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN
AVOL	111.6	2.830	113.7	1.464	
IB	38.50	3.408	59.12	3.587	
IOS	NA	0.566	0.458	1.531	1.198
VOS	MV	0.424	0.361	0.396	0.358

REMARKS: ** RIN=10K, RF=20K, RL=10K, NO SIGNAL INPUT. *NEUTRONS: 6.E11 N/SQCM.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
101	OP AMP	BIPOLAR	1064 5660

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM101AM		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7810	CO-60 + N*	10	V+=+15V; V--15V.

CUM. DOSE (RADS):		O		*N+100K		*N+300K		*N+500K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN
AVOL	113.5	2.037	114.6	2.298	104.2	7.861	102.5	6.844	
IB	37.54	7.947	67.98	11.79	106.9	16.33	132.6	17.63	
IOS	NA	.6996	1.751	1.402	2.078	1.666	3.051	1.934	4.213
VOS	MV	.1420	.6893	.2319	.6870	.3000	1.327	.7298	1.431

REMARKS: *NEUTRON RAD. = 6.E11 N/SQCM.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1021	4-BIT A/D CONVERTER	TTL	1-145	80

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TRW	TTC1021J		JPL

LDLC	RAD. TYPE	PART QTY.	BIAS
7935	2.5MEV EL	3	VCC=5.25, VEE=-6.25V, VRB=-2.0V.

CUM. DOSE (RADS):		0		30K		75K		150K		600K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX)*	MA	10.10		11.05		9.58		13.95		13.60	
IEE(MAX)	MA	40.2		37.8		37.5		36.5		35.8	
IRB(MAX)	MA	3.01		2.97		2.97		2.97		2.96	
DELTA-RVAG											
(MAX)	OHMS	---		0.298		0.322		0.339		0.363	
IIH(MAX)	UA	14.79		16.00		14.74		13.32		11.75	
--PARAMETERS		CONT.		REC.		81.					
REMARKS: * MEAN=NOT T-CASE (NOT AVERAGE) @VCC=5.OV, VEE=-6.OV, VRT=0.OV, VRB=-1V.											

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1021	4-BIT A/D CONVERTER	TTL	1-145	81

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TPW	TDC1021J		

LDC	RAD.	TYPE	PART	QTY.	BIAS
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
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46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75					

CUM. DOSE (RADS):		0		30K		75K		150K		600K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IIL(MAX)	UA	810		782		775		778		781	
VOH(MIN)	V	2.96		2.97		2.95		2.94		2.91	
IOS(MAX)	MA	7.84		7.56		7.51		7.49		7.44	
VOL(MAX)	MV	313		323		324		330		348	
TSK(MIN)	MA	16.01		14.52		12.95		11.45		9.10	

* REMARKS: CONTINUATION FROM RECORD 80. *PARAMETERS CONTINUED ON RECORD 82.

GENERIC PART NUMBER: 1021

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GENERIC PART NUMBER: 1021

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
1021	4-BIT A/D CONVERTER	TTL	1-145 82

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TRW	TDC1021J		

LDC	RAD. TYPE	PART QTY.	BIAS
-----	-----------	-----------	------

CUM. DOSE(RADS):		0		30K		75K		150K		600K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ACCURACY (MAX) %		.0346		.0336		.0336		.0351		.0333	
TOP ERROR (MAX) MV		9.00		8.50		8.50		8.00		8.00	
BOTTOM ERROR (MAX) MV		1.5		0.5		0.5		0.5		2.5	

REMARKS: CONTINUATION FROM RECORD 81. *END OF PARAMETERS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
103	OPTICAL COUPLER	BIPOLAR	1015A 5150

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	TIL103		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7943	CO-60	5	VCC=10V, B * GND, E TO GND VIA 10K, DIODE SHORTED.

CUM. DOSE (RADS) :		0		100K		200K		500K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
HFE(1)		1139.	217.	833.2	114.9	660.8	69.0	433.8	40.0	374.6	47.3
HFE(2)		1315.	223.	1150.	166.	974.6	112.4	764.2	86.5	730.0	105.2

REMARKS: (1)VCE=5V, IC=1MA, IF=0. (2)VCE=5V, IC=10MA, IF=0. *** CONT. ON REC. 5151

GENERIC PART NUMBER: 103

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 103 OPTICAL COUPLER BIPOLAR 1015A 5151

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 TI TIL103

 LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 100K 200K 500K 1MEG

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 * VCE(SAT)** MV 137.2 11.0 149.2 11.9 159.6 17.3 223.0 56.6 7353. 7036.

 VCE(SAT) MV 155.6 13.7 174.0 15.0 179.4 18.7 213.4 31.9 262.4 52.3
 @IC=10MA,
 IB=0. IF=20MA

REMARKS: *CONT. FROM REC. 5150. **IC=5MA, IF=10MA, IB=0. *** CONT. ON REC. 5152

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 103 OPTICAL COUPLER BIPOLAR 1015A 5152

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 TI TIL103

 LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 100K 200K 500K 1MEG

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 * IC(ON) MA 6.678 2.976 5.042 2.235 4.432 1.905 2.742 1.417 2.108 1.318
 @IF=5MA, (1)
 IC(ON) MA 15.30 5.54 12.41 4.38 11.01 3.75 8.008 3.338 5.262 0.647
 @IF=10MA, (1)
 IC(OFF)(2) NA 2.260 0.634 2.240 0.920 2.800 0.692 10.97 12.67 45.96 97.85
 1PT-ANOM.@**
 REMARKS: *CONT. FROM REC. 5151. (1)VCE=5V, IB=0. (2)VCE=20V, IB=0, IF=0.
 **

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GENERIC PART NUMBER: 104

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
104	VOLT REG	BIPOLAR	32	1020

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM104	IRT CORP	

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	4	UNK.

CUM. DOSE (RADS):	0	300K		100K		300K		1M	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
D ICC		-0.030	.0082	-0.05	.0082	-0.073	.0050	-0.095	.0058
D LINE REG %		0.038	.051	0.01	.05	-0.10	.052	-0.357	.060
D LOAD REG %		0.0	0.0	.0045	.0052	0.047	.0085	0.137	0.020
D VOL DIF V		.0225	0.005	.0475	0.005	0.075	0.001	.0875	0.005

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
104	VOLTAGE REGULATOR	BIPOLAR	24-14	1360

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM104F	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8011	CO-60		UNK.

CUM. DOSE (RADS):	0	10K		30K		100K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
D LOAD REG %		0.004	0.015	-0.004	0.031	0.010	0.028
						0.005	0.015

REMARKS:

GENERIC PART NUMBER: 104

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 GENERIC PART NUMBER: 105
 FUNCTION: VOLTAGE REGULATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 805-1 4450

MANUFACTURER: NSC
 PART NUMBER: LM105
 SPECIFICATION: TI
 DATA SOURCE: TI

LDC RAD. TYPE PART QTY. BIAS
 H142 CO-60 4 UNK.

CUM. DOSE (RADS): 0 12.5K 25K 50K 100K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 LOAD REG MV 5 0 .55 .52 .55 .52 .425 .427 .65 .436
 VOUT V 11.15 .051 11.19 .0722 11.14 .0798 11.14 .0930 11.12 .1054
 LINE REG MV 5.000 .8165 6.375 1.947 7.75 2.500 8.575 2.420 8.75 2.363

REMARKS:

 GENERIC PART NUMBER: 105
 FUNCTION: VOLTAGE REGULATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1041 5430

MANUFACTURER: MOTOROLA
 PART NUMBER: LM105F
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 7530 CO-60 5 V+=+30V; PINS 4,6 @GND; PINS 7,8,9 TO GND VIA 2K.

CUM. DOSE (RADS): 0 100K 300K 500K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 V0@10V, 1MA V 5.554 0.064 5.554 0.064 5.554 0.064 5.554 0.064
 V0@35V, 1MA V 5.570 0.059 5.570 0.059 5.570 0.059 5.570 0.059
 V0@15V, 0MA V 5.562 0.061 5.560 0.059 5.560 0.059 5.560 0.059
 V0@15V, 12MA V 5.576 0.064 5.574 0.062 5.574 0.062 5.574 0.062
 LINE REG MV 18.00 4.472 16.00 5.477 18.00 4.472 18.00 4.472
 LOAD REG MV 14.00 8.944 14.00 8.944 14.00 8.944 14.00 8.944

REMARKS:

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GENERIC PART NUMBER		FUNCTION		TECHNOLOGY		REF.NO.		RECORD	
108		OP AMP		BIPOLAR		1-42		190	
MANUFACTURER		PART NUMBER		SPECIFICATION		DATA SOURCE			
ADVANCED MICRODEVICE		LM108						JPL	
LDC	RAD. TYPE	PART QTY.	BIAS						
NONE	2.5MEV EL	5	UNK.						
CUM.DOSE(RADS):						O			
PARAMETERS		MEAN	SD	75K	150K	300K	600K		
DVOS MV		.7	.1802	1.4	.4153	2.5	.6489	4.1	.8650
DIOS NA		.08	.0235	.2	.0856	.6	.1862	1.45	.3601
DIB NA		3.8	.6661	7.2	1.006	11.6	1.346	17.4	1.648
+GAIN DB		98.8	1.039	92.	1.500	87.	1.848	82.	1.022
-GAIN DB		112.0	1.047	87.8	1.243	82.	2.008	76.4	1.655

REMARKS:

GENERIC PART NUMBER		FUNCTION		TECHNOLOGY		REF. NO.		RECORD	
108		OP AMP		BIPOLAR		1-43		200	
MANUFACTURER		PART NUMBER		SPECIFICATION		DATA SOURCE			
NATIONAL SEMI.		LM108						JPL	
LDC		RAD. TYPE		BIAS					
NONE		2.5MEV EL		3		UNK.			
CUM. DOSE (RADS):		0		75K		250K		750K	
PARAMETERS		MEAN SD		MEAN SD		MEAN SD		MEAN SD	
DV05 MV		.07 .0140		.1 .2271		.22 .0407		.59 .2729	
DI05 NA		.05 .1661		.1 .2856		1.15 .5836		2.3 1.495	
DIB NA		.5 .0778		.2 .0601		12. .4680		28.5 1.034	
+GAIN DB		104.4 1.344		93.4 1.349		FAIL		FAIL	
-GAIN DB		112. 5.963		105. 1.506		93.5 .7009		78.5 1.209	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
108	OP AMP	BIPOLAR	1-44 210
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMI.	LM108		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60.	3	UNK.
CUM. DOSE (RADS): 0			
PARAMETERS	MEAN	SD	75K 250K 750K 2.5MEG
DVDS MV	.005	.0200	.02 .0755 .05 .1330 .485 .2343
DIDS NA	.012	.0536	.054 .0555 .074 .0936 .09 .4185
DIB NA	.6	.0608	2. .1351 5.4 .6722 14. 1.354
+GAIN DB	104	105.2 3.806	102.8 2.132 102.4 7.271 90.6 .9143
-GAIN DB	107	105. 3.391	101. 2.815 93.5 2.182 78. 1.687

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
108	OP AMP	BIPOLAR	1-45 220
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMI.	LM108		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.
CUM. DOSE (RADS): 0			
PARAMETERS	MEAN	SD	75K 150K 300K 600K
DVDS MV	.05	.0228	.11 .0358 .22 .0497 .47 .0917
DIDS NA	.001	.0507	.036 .0378 .04 .1169 .168 .2116
DIB NA	1.4	.1336	2.6 .1767 4.7 .2809 8.2 .4705
+GAIN DB	114	119.2 18.11	115.8 11.63 103.8 3.275 FAIL
-GAIN DB	121	106. 3.013	100.6 1.425 94. 1.052 FAIL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD							
108	OP AMP	BIPOLAR	1-46	230							
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE								
NATIONAL SEMI.	LM108		JPL								
LDC	RAD. TYPE	PART QTY.	BIAS								
NONE	2.5MEV EL	3	UNK.								
CUM.DOSE(RADS): 0											
PARAMETERS		75K		150K		300K		600K			
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
DVOS MV		.01	.0198		.004	.0239		.036	.0749	.074	.0787
DIOS NA		.022	.0283		.012	.0364		.004	.0515	.108	.1303
DIB NA		.8	.0459		1.6	.0849		4.	.1641	4.8	.2442
+GAIN DB	117	112.4	2.083	108.4	1.838		99.2	1.081		95.	.6658
-GAIN DB	114	113.5	4.376	112.2	6.005		105.4	1.820		104.2	2.811

REMARKS:

GENERIC PART NUMBER		FUNCTION	TECHNOLOGY		REF. NO.	RECORD	
108		OP AMP	BIPOLAR		1-47	240	
MANUFACTURER		PART NUMBER	SPECIFICATION		DATA SOURCE		
NATIONAL SEMI.		LM108			JPL		
LDC	RAD. TYPE	PART QTY.	BIAS				
NONE	2.5MEV EL	3	UNK.				
CUM. DOSE (RADS):			0	600K			
PARAMETERS		MEAN	SD	75K	150K	300K	
				MEAN	SD	MEAN	SD
DVOS MV				.03	.0098	.072	.0158
DIOS NA				.38	.4640	.02	.1531
DIB NA				1.3	.1180	2.8	.0698
+GAIN DB	127			120.	2.376	108.	.6673
-GAIN DB	122			128.5	4.233	110.5	.6447
						106.	.3040
						.18	.0632
						.015	.2401
						6.9	.4272
						99.	.6202
						106.	.3040
						.218	.0594
						.045	.2578
						9.	.4206
						95.	.4266
						101.	.3168

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
108	OP AMP	BIPOLAR	1-48	250

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM108		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	3	UNK.

CUM.DOSE(RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.02	.0157	.049	.0271	.13	.0519	.27	.0896
DIOS NA		.017	.0101	.02	.0090	.022	.0731	.076	.0286
DIB NA		.8	.1026	1.6	.1921	2.9	.3369	5.1	.5514
+GAIN DB	140	115.6	3.427	106.8	.4363	98.8	.4363	FAIL	
-GAIN DB	120	115.	2.306	110.2	.6696	104.	.6696	94.5	.4576

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
108	OP AMP	BIPOLAR	1-49	260

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM108		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	3	UNK.

CUM.DOSE(RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.1	.0044	.18	.0094	.36	.0186	.75	.0293
DIOS NA		.07	.0216	.09	.0468	.22	.0198	.47	.0652
DIB NA		2.	.1558	3.8	.2775	7.	.4668	13.2	.7558
+GAIN DB	122	123.	4.825	120.	12.25	106.	3.792	96.	1.906
-GAIN DB	120	125.2	8.474	122.	10.95	117.8	2.033	106.4	3.476

REMARKS:

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 GENERIC PART NUMBER: 108

 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-51 280

 MANUFACTURER: PRECISION MONOLITHIC
 PART NUMBER: LM108
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 * 2.5MEV EL 5 UNK.

CUM. DOSE (RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVDS MV	.81	.6401	1.38	.9653	1.18	.9291	.75	.7276
DIOS NA	.21	.2216	.4	.2485	.47	.3216	.43	.3472
DIB NA	3.9	1.979	5.6	2.717	8.5	3.700	13.6	5.575
+GAIN DB	118	106.5	10.17	FAIL	FAIL	FAIL	FAIL	FAIL
-GAIN DB	124	104.3	8.049	97.5	3.850	98.7	4.147	FAIL

REMARKS:

 GENERIC PART NUMBER: 108

 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 27 1160

 MANUFACTURER: UNKNOWN
 PART NUMBER: LM108A
 SPECIFICATION: IRT
 DATA SOURCE: IRT

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 10 V+=+10V, V=-10V

CUM. DOSE (RADS): 0

PARAMETERS	2M	
	MEAN	SD
DVDS MV	-.035	.2266
DIB NA	-.648	.3625

REMARKS:

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 GENERIC PART NUMBER 108
 FUNCTION OP-AMP
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 24-18 1330

 MANUFACTURER BARNES
 PART NUMBER LM108AH
 SPECIFICATION COMMERCIAL
 DATA SOURCE ROCKWELL

 LDC RAD. TYPE PART QTY. BIAS
 7917 CO-60 8 V+=15V, V--=15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE (RADS): 0
 30K 100K 300K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 D VOS MV 0.004 0.006 0.680 0.117 7.347 1.294
 D IOS NA -.016 0.012 -.372 0.056 -.235 0.728
 D IIB NA 0.145 0.031 0.694 0.185 1.888 0.643

REMARKS:

 GENERIC PART NUMBER 108
 FUNCTION OP-AMP
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 24-16 1340

 MANUFACTURER NATIONAL
 PART NUMBER LM108AF
 SPECIFICATION COMMERCIAL
 DATA SOURCE ROCKWELL

 LDC RAD. TYPE PART QTY. BIAS
 8016 CO-60 8 V+=15V, V--=15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE (RADS): 0
 30K 100K 300K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 D VOS MV 0.008 0.019 2.747 1.169 24.55 8.374
 D IOS NA -.029 0.020 -.514 0.293 13.14 2.063
 D IIB NA 0.540 0.095 2.656 0.521 12.64 3.286

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
108	OP-AMP	BIPOLAR	24-15	1350

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	LM108AF	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8017	CO-60	8	V+=15V, V-=-15V, NONINV-INPUT=5V, INV-IN=OUT

CUM. DOSE (RADS):		0		30K		100K		300K			
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
D VDS	MV			0.517	0.432	3.304	2.686	15.08	18.52		
D IOS	NA			0.823	2.064	4.878	7.759	26.11	39.54		
D IIB	NA			9.803	4.494	29.74	12.80	68.84	25.21		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
108	OP AMP	BIPOLAR	25-3	1620

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM108AH		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7613	CO-60	5	V+=15V, V-=-15V, TYPICAL CIRCUIT (RF=10XRI)

CUM. DOSE (RADS):		0		6.1K		21K		82K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	MV	.3		.3		.3		.3		.3		
IIO	NA	.01		.01		.02		.01		.03		
IB	NA	1.0		1.1		1.2		1.6		2.6		
IQ	MA	.30		.30		.30		.30		.30		
QBW	KHZ	222		218		235		231		229		

REMARKS: * 4 OF 5 FAILED 2 NA LIMIT FROM 15 TO 60%

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
108	OP-AMP	BIPOLAR	16	1650

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	LM108		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7816	CO-60	4	V+=20V, V--=20V, VIN+=+3V, VIN- TIED TO VOUT

CUM.DOSE(RADS): 0

PARAMETERS	25K		50K	
	MEAN	SD	MEAN	SD
AVOL	365.0	156.7	65.25	15.15
CMR	130.3	2.500	12.25	3.862
PSRR	112.0	3.652	104.5	10.41
VIO	.1950	.1457	.7000	.4143
IIN	.4925	.0350	9.613	9.114
IIO	-.003	.0150	.4500	.4359
ICC	.2575	.0350	.2375	.0325

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
108	OP AMP	BIPOLAR	1005	5040

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM108F		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8009A	CO-60	5	V+=15V, V--=15V, VIN=1V(P-P)1KHZ, RIN=10K, RF=100K

CUM.DOSE(RADS): 0

PARAMETERS	50K		66.2K		82.7K	
	MEAN	SD	MEAN	SD	MEAN	SD
AVOL	110.2	4.49	109.6	3.98	108.7	4.45
CMR	53.40	0.99	52.86	1.06	52.34	1.24
PSRR	37.74	1.65	35.60	2.80	35.36	2.83
VIO	-5.36	8.606	-78.0	12.14	-884.	249.2
IIN	0.919	0.126	2.110	0.374	2.584	0.605
IIO	-0.10	0.144	-1.26	0.827	-12.8	4.958
ICC						

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
108	OP AMP	BIPOLAR	1050	5520

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
"AMD?"	LM108		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8003F	CO-60 + N*	10	V+=+15V. V=-15V. NONINV-INPUT TO GND VIA 6.8K **

CUM. DOSE (RADS)	0		200K+N*	
	MEAN	SD	MEAN	SD
PARAMETERS				
AVOL	106.9	2.302	100.6	2.703
DB				
NA	0.986	0.250	3.122	0.711
IIB				
PA	27.9	31.5	95.4	123.0
ABS(IOS)				
ABS(VOS)	196.9	145.7	365.4	213.6
UV				

REMARKS: ** RIN=RL=10K, RF=20K, NO SIGNAL INPUT. *NEUTRON: 6.E11 N/SQCM.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
108	OP AMP	BIPOLAR	1065	5670

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AND	LM108AH		TRW

DC	RAD.	TYPE	PART QTY.	BIAS
**	C0-60	+ N*	10	V+=+15V- V=-15V

CUM. DOSE (RADS):		0		*N+100K		*N+300K		*N+500K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DB	AVOL	108.1	2.484	101.6	2.524	98.98	3.531	96.96	4.237
NA	IB	1.047	.3501	2.534	.6033	4.008	.9562	5.302	1.338
NA	ODS	.0236	.0327	.1017	.0901	.1919	.2264	.3443	.3878
NA	IDS	.1511	.2800	-.056	.3043	-.208	.3322	-.315	.4369

REMARKS: **7846DP. *NEUTRON RAD. = 6.E11 N/SQCM.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
109	5-VOLT REGULATOR	BIPOLAR	805-2	4460

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM109	TI	

LDC	RAD. TYPE	PART QTY.	BIAS
115	CO-60	6	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	12.5K		25K		50K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LOAD REG MV	13.67	1.366	13.83	1.560	14.08	1.584	14.67	1.633
VOUT V	5.003	.0263	5.002	.0263	4.999	.0263	4.991	.0264
LINE REG MV	6.55	.1975	8.667	.3907	9.183	.5529	9.367	.3109
								9.633
								.3236

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
11	OP-AMP	BIPOLAR	24-5	1450

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM11CN	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	10	V+=15V, V-=-15V, NONINV-INPUT=5V, INV-INPUT=OUTPUT

CUM. DOSE (RADS): 0

PARAMETERS	10K		30K		100K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VDS MV	-0.056	0.138	-0.072	0.126	1.329	2.279	2.799	6.044
D IOS NA	-0.015	0.034	0.040	0.042	0.057	0.046	0.023	0.121
D IIB NA	-0.009	0.015	-0.086	0.029	0.029	0.079	1.001	0.359

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
11	SAMPLE AND HOLD	BIPOLAR	1-142 1870

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PMI	SMP11F		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7920	2.5MEV EL	5	VCC=12V, VEE=12V.

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VDS(MAX) * MV	7.29		10.04		14.16		17.10	
IB(MAX) UA	34.3		46.3		60.2		64.0	
+AV(RL=N/C)								
(MIN) DB	.9998		.9956		.9993		.9992	
-AV(RL=N/C)								
(MIN) DB	.9998		.9997		.9995		.9994	
-- PARAMETERS CONT. ON REC. 1871.								
REMARKS: * MEAN=WORST-CASE (NOT AVG.) @VCC=12V, VEE=-12V, HOLD CAP=.05MFD.								

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
11	SAMPLE AND HOLD	BIPOLAR	1-142 1871

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PMI	SMP11F		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
+AV(PL=2.5K) *								
(MIN) DB	.9997		.9995		.9993		.9991	
-AV(RL=2.5K) *								
(MIN) DB	.9997		.9996		.9994		.9992	
ISK* (MIN) MA	8.78		7.33		6.33		5.83	
ISC* (MIN) MA	-19.5		-19.6		-19.4		-19.4	
--PARAMETERS CONT. ON REC. 1872.								
REMARKS: CONTINUED FROM RECORD 1870. * MEAN=WORST-CASE VALJE.								

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

11 SAMPLE AND HOLD BIPOLAR 1-142 1872

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

PMI SMP11F

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 30K 150K 600K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

+SR(RL=2.5K)* 4.50 3.44 2.03 1.11 0.60
 (MIN) V/US
-SR(RL=2.5K)* -5.59 -4.51 -3.36 -2.34 -1.88
 (MIN) V/US
IIH* (MAX) NA 0.83 1.05 1.43 1.82 3.13
IIL* (MAX) UA -5.33 -11.1 -15.7 -17.7 -17.4
--PARAMETERS CONT. ON REC. 1873.
REMARKS: CONTINUED FROM RECORD 1871. * MEAN=WORST-CASE VALUE

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

11 SAMPLE AND HOLD BIPOLAR 1-142 1873

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

PMI SMP11F

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 30K 150K 600K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

TACQ(RL=2.5K) 3.51 4.99 7.18 8.92 7.68
 *(MAX) US
Q TRANS* 583 596 593 632 626
 (MAX) PC
ICC* (MAX) MA 5.25 5.04 4.93 4.87 4.79
--PARAMETERS CONT. ON REC. 1874.
REMARKS: CONTINUED FROM RECORD 1872. * MEAN=WORST-CASE VALUE.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
110	OP AMP VOLT FOLLOWR	BIPOLAR	1066 5680

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	LM110C		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7515	CO-60 + N*	10	V+=+15V; V=-15V

CUM. DOSE(RADS): 0

PARAMETERS	MEAN	SD	*N+100K		*N+300K		*N+500K	
			MEAN	SD	MEAN	SD	MEAN	SD
VDS MV	2.394	1.122	2.562	1.144	2.499	1.241	2.431	1.328
IB NA	1.533	.5662	5.780	1.547	12.92	3.586	18.72	5.003
RIN GIGOHM	655.5	283.2	121.0	22.50	110.0	31.62	90.00	45.95
+SLEW(1) V/US	1377	58.53	1537	81.38	1530	78.31	1537	81.38
-SLEW(1) V/US	697.1	54.38	680.7	67.20	687.4	66.08	716.2	59.56
+SLEW(2) V/US	35.20	4.290	34.90	4.202	33.90	4.149	33.70	3.917
-SLEW(2) V/US	20.70	2.263	20.80	2.394	20.60	2.413	20.10	2.470

REMARKS: *NEUTRON RAD. = 6.E11 N/SQCM. (1)INPUT R = 0. (2)INPUT R = 10K.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
111	COMPARATOR	BIPOLAR	1-52 300

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
78240	2.5MEV EL	3	UNK.

CUM. DOSE(RADS): 0

PARAMETERS	MEAN	SD	75K		250K		750K		2.5MEG	
			MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVDS MV			.3	.0939	.6	.0837	1.2	.2061	3.9	.2861
DIDS NA			2.	.8581	4.	.7663	15.	.5954	74.	1.589
DIB NA			55.	2.857	120.	5.864	250.	12.07	500.	27.11

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-53	310

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM. DOSE (RADS):	0	5K		10K		15K		20K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.12	.0483	.26	.0833	.4	.1113	.52	.1331
DIOS NA		.1	.3350	.24	.5688	.36	1.068	.43	1.878
DIB NA		28.	9.860	52.	22.51	74.	36.09	95.	49.79

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-54	320

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM. DOSE (RADS):	0	30K		40K		50K		75K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.7	.1712	.88	.1988	1.4	.2544	1.28	.3143
DIOS NA		1.2	3.240	2.5	4.068	3.8	4.727	5.4	4.476
DIB NA		117.2	64.48	127.6	69.78	131.	69.90	129.2	76.59

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
111	COMPARATOR	BIPOLAR	1-55 330

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM. DOSE (RADS):		0		30K		40K		50K		75K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.5	.2738	.63	.3384	.75	.4014	.91	.4838				
DIOS NA	1.55	1.657	2.35	2.418	3.	3.234	3.95	3.817				
DIB NA	18.	13.38	32.	23.64	42.	33.34	52.5	44.13				

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
111	COMPARATOR	BIPOLAR	1-56 340

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM. DOSE (RADS):		0		5K		10K		15K		20K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.17	.0584	.34	.1128	.49	.1589	.63	.2093				
DIOS NA	.05	.4422	.4	.6551	1.1	1.153	2.05	1.726				
DIB NA	32.	12.67	64.	25.53	94.	37.80	122.	49.22				

REMARKS:

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 GENERIC PART NUMBER 111

 FUNCTION COMPARATOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1-57 350

 MANUFACTURER
 PART NUMBER
 SPECIFICATION
 DATA SOURCE
 JPL
 ADVANCED MICRODEVICE LM111

 LDC RAD. TYPE PART QTY. BIAS
 7922 2.5MEV EL 8 UNK.

CUM. DOSE (RADS): 0
 30K 40K 50K 75K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 DVOS MV .58 .3121 .79 .3905 .84 .4767 1.1 .6199
 DIOS NA 2.5 3.208 3.7 4.873 5. 6.230 6.7 7.801
 DIB NA 84. 81.98 95. 88.45 101. 86.83 106. 78.87

REMARKS:

 GENERIC PART NUMBER 111

 FUNCTION COMPARATOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1-58 360

 MANUFACTURER
 PART NUMBER
 SPECIFICATION
 DATA SOURCE
 JPL
 ADVANCED MICRODEVICE LM111

 LDC RAD. TYPE PART QTY. BIAS
 7922 2.5MEV EL 8 UNK.

CUM. DOSE (RADS): 0
 5K 10K 15K 20K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 DVOS MV .1 .0766 .22 .1381 .31 .1829 .42 .2353
 DIOS NA .2 .2891 .52 .4148 .76 1.083 1.48 1.769
 DIB NA 18. 14.83 34. 30.30 49.9 46.12 64. 61.30

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-59	370

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM. DOSE (RADS):		30K		40K		50K		75K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV		.58	.3629	.71	.4338	.86	.5222	1.18	.6424
DIOS NA		1.9	1.515	2.3	1.814	3.2	2.079	3.9	2.835
DIB NA		18.	13.37	33.	24.91	43.	32.50	48.	34.67

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-60	380

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM. DOSE (RADS):		5K		10K		15K		20K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV		.13	.0911	.245	.1617	.35	.2312	.445	.2896
DIOS NA		.19	.3221	.44	.6459	.84	.7986	1.32	1.088
DIB NA		54.	33.60	58.8	32.20	64.8	30.82	73.2	27.19

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-61	390

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC RAD. TYPE PART QTY. BIAS
7922 2.5MEV EL 8 UNK.

CUM. DOSE (RADS): 0

PARAMETERS	30K		40K		50K		75K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.62	.2936	.76	.3627	.9	.4309	1.12	.5291
DIOS NA	1.7	1.497	2.6	2.750	3.5	3.708	4.8	4.851
DIB NA	16.	9.174	30.5	22.12	35.	25.16	51.	44.41

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-62	400

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC RAD. TYPE PART QTY. BIAS
7922 2.5MEV EL 8 UNK.

CUM. DOSE (RADS): 0

PARAMETERS	5K		10K		15K		20K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.11	.0697	.265	.1374	.36	.1329	.45	.2231
DIOS NA	3.5	12.49	.1	1.199	.6	.5942	.85	.7954
DIB NA	66.	61.64	77.	72.63	84.5	76.31	90.5	71.56

REMARKS:

GENERIC PART NUMBER: 111

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
111	COMPARATOR	BIPOLAR	1-63	410

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM.DOSE(RADS):	O	5K		10K		15K		20K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.115	.0585	.27	.1048	.375	.1477	.455	.1764
DIOS NA		3.	6.357	.8	.7796	1.28	1.292	1.8	1.929
DIB NA		88.	70.10	93.8	70.25	100.	69.45	107.4	63.52

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
111	COMPARATOR	BIPOLAR	1-64	420

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	8	UNK.

CUM.DOSE(RADS):	O	30K		40K		50K		75K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVGS MV		.62	.2390	.76	.2969	.91	.3614	1.12	.4618
DIOS NA		2.9	2.834	3.5	3.533	4.15	4.107	5.25	5.396
DIB NA		24.	12.64	43.	27.43	59.	43.09	73.	56.86

REMARKS:

GENERIC PART NUMBER: 111

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 GENERIC PART NUMBER: 111

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-65	430

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	7	UNK.

CUM. DOSE (RADS):		30K		40K		50K		75K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.78	.4216	.93	.5049	1.06	.5420	1.36	.7032		
DIOS NA	3.75	4.946	4.25	5.246	5.	5.846	6.1	6.675		
DIB NA	18.	13.47	34.5	26.31	46.	36.06	54.5	44.40		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-66	440

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	7	UNK.

CUM. DOSE (RADS):		5K		10K		15K		20K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.14	.0981	.31	.1781	.44	.2339	.57	.3150		
DIOS NA	.8	2.255	1.4	2.716	1.96	3.038	2.72	3.727		
DIB NA	65.2	54.59	69.5	54.42	72.	52.83	78.	49.57		

REMARKS:

 GENERIC PART NUMBER: 111

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 GENERIC PART NUMBER: 111

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-67	450
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
ADVANCED MICRODEVICE	LM111		JPL	

LDC RAD. TYPE PART QTY. BIAS
 7922 2.5MEV EL 8 UNK.

CUM.DOSE(RADS):		0		30K		40K		50K		75K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS	MV			.79	.3618	.94	.4296	1.12	.5164	1.42	.6632
DIOS	NA			5.9	4.847	8.4	6.431	10.4	8.005	12.6	9.165
DIB	NA			151.	87.58	159.	98.34	171.	96.67	170.8	87.01

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-L.	460
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
ADVANCED MICRODEVICE	LM111		JPL	

LDC RAD. TYPE PART QTY. BIAS
 7922 2.5MEV EL 8 UNK.

CUM. DOSE (RADS):		0		5K		10K		15K		20K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS	MV	.14	.0699	.3	.1514	.44	.2104	.55	.2656		
DIOS	NA	.4	.7014	7.2	14.10	1.6	2.330	3.	3.042		
DIB	NA	28.	14.39	52.	36.15	88.	47.13	114.	62.95		

REMARKS:

 GENERIC PART NUMBER: 111

GENERIC PART NUMBER: 111

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-69	470

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	5K		10K		15K		20K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.08	.0499	.18	.1059	.27	.1555	.34	.1962
DIOS NA		.07	.3447	.28	.4681	.43	.6277	.6	.8241
DIB NA		14.	10.96	24.5	19.27	31.	22.62	35.	22.97

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-70	480

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	9	UNK.

CUM. DOSE (RADS):	0	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.36	.0474	.72	.1430	.98	.3596
DIOS NA		1.	.8986	3.2	1.725	6.9	3.811
DIB NA		56.	21.76	104.	4.270	168.	4.832

REMARKS:

GENERIC PART NUMBER: 111

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GENERIC PART NUMBER: 111

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
111	COMPARATOR	BIPOLAR	1-71	490

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	9	UNK.

CUM.DOSE(RADS):	O	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVDS MV		.48	.0467	1.04	.1289	1.72	.2180
DIOS NA		2.	.4121	4.6	.9645	11.	1.728
DIB NA		66.	5.270	103.	6.196	160.	8.227

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
111	COMPARATOR	BIPOLAR	1-72	500

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	9	UNK.

CUM.DOSE(RADS):	O	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVDS MV		.5	.0392	.92	.2240	1.58	.3313
DIOS NA		1.8	.7050	4.2	1.519	9.	3.108
DIB NA		62.	4.800	100.	5.128	156.	6.141

REMARKS:

GENERIC PART NUMBER: 111

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GENERIC PART NUMBER: 111

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 GENERIC PART NUMBER 111
 FUNCTION COMPARATOR
 TECHNOLOGY BIPOLAR
 REF.NO. RECORD 1-73 510

MANUFACTURER
 PART NUMBER
 SPECIFICATION
 DATA SOURCE
 JPL
 ADVANCED MICRODEVICE LM111

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 9 UNK.

CUM.DOSE(RADS): 0
 PARAMETERS MEAN SD 75K 150K 300K
 MEAN SD MEAN SD MEAN SD
 DVOS MV .44 .1216 .98 .2775 1.52 .4773
 DIOS NA 2.1 1.240 5.2 2.313 11.2 4.455
 DIB NA 64. 16.12 108. 11.78 168. 11.98

REMARKS:

 GENERIC PART NUMBER 111
 FUNCTION COMPARATOR
 TECHNOLOGY BIPOLAR
 REF.NO. RECORD 1-74 520

MANUFACTURER
 PART NUMBER
 SPECIFICATION
 DATA SOURCE
 JPL
 ADVANCED MICRODEVICE LM111

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 9 UNK.

CUM.DOSE(RADS): 0
 PARAMETERS MEAN SD 75K 150K 300K
 MEAN SD MEAN SD MEAN SD
 DVOS MV .34 .0495 .6 .1024 .88 .1738
 DIOS NA .8 .8675 2.4 1.473 6.6 2.653
 DIB NA 68. 8.192 116. 9.306 196. 15.65

REMARKS:

 GENERIC PART NUMBER: 111

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 GENERIC PART NUMBER: 111

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 GENERIC PART NUMBER 111
 FUNCTION COMPARATOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1-76 530

 MANUFACTURER PART NUMBER
 SPECIFICATION DATA SOURCE
 ADVANCED MICRODEVICE LM111 JPL

 LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 9 UNK.

CUM. DOSE (RADS): 0
 75K 150K 300K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 DVOS MV .27 .0259 .47 .0464 .64 .0955
 DIOS NA .8 .6484 2. .9466 4.8 1.432
 DIB NA 70. 5.620 112. 7.630 182. 11.24

REMARKS:

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 GENERIC PART NUMBER 111
 FUNCTION COMPARATOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1-77 540

 MANUFACTURER PART NUMBER
 SPECIFICATION DATA SOURCE
 ADVANCED MICRODEVICE LM111 JPL

 LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 9 UNK.

CUM. DOSE (RADS): 0
 75K 150K 300K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 DVOS MV .4 .8198 1.25 .5372 4.1 6.549
 DIOS NA 6.32 8.865 7.58 4.967 6.72 64.77
 DIB NA 82. 31.43 118. 31.37 174. 28.57

REMARKS:

 GENERIC PART NUMBER: 111

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
111	COMPARATOR	BIPOLAR	1-78 550

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	9	UNK.

CUM. DOSE (RADS):	0	75K	150K	300K
PARAMETERS	MEAN	SD	MEAN	SD
DVOS MV	.44	.0531	1.1103	1.56
DIOS NA	1.8	.7225	4.4	1.209
DIB NA	70.	3.875	112.	4.709
			172.	6.446

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
111	COMPARATOR	BIPOLAR	1-79 560

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	9	UNK.

CUM. DOSE (RADS):	0	75K	150K	300K
PARAMETERS	MEAN	SD	MEAN	SD
DVOS MV	.34	.0358	.7	.0688
DIOS NA	1.6	.5578	4.	1.166
DIB NA	78.	4.702	128.	7.474
			208.	12.32

REMARKS:

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 GENERIC PART NUMBER: 111

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
111	COMPARATOR	BIPOLAR	1-82	590

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	9	UNK.

CUM.DOSE(RADS):	O	75K				150K				300K			
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD		
PARAMETERS													
DVOS MV		.39	.0389			.76	.0882			1.12	.1390		
DIOS NA		1.2	.6962			3.1	.8941			8.8	1.759		
DIB NA		66.	6.586			116.	8.553			188.	11.14		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
111	COMPARATOR	BIPOLAR	1-83	600

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	6	UNK.

CUM.DOSE(RADS):	O	75K				150K				300K			
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD		
PARAMETERS													
DVOS MV		.295	.0659			.41	.0718			.595	.1318		
DIOS NA		.7	.6679			1.	1.088			3.4	1.731		
DIB NA		72.	4.489			108.	5.576			184.	9.369		

REMARKS:

 GENERIC PART NUMBER: 111

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-84	610

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	7	UNK.

CUM. DOSE (RADS):	0	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.26	.0625	.54	.1357	.82	.1810
DIOS NA		5.3	5.655	2.1	1.429	5.9	2.062
DIB NA		76.	3.800	124.	5.005	212.	8.716

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATOR	BIPOLAR	1-85	620

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMI.	LM111		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
TASK4	2.5MEV EL	3	UNK.

CUM. DOSE (RADS):	0	75K		250K		750K		2.5M	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		1.2	.2208	2.2	.6421	5.2	1.792	19.2	11.82
DIOS NA		10.	5.251	50.	18.49	170.	46.65	395.	90.24
DIB NA		360.	17.24	640.	14.06	830.	25.76	645.	77.98

REMARKS:

GENERIC PART NUMBER 111

FUNCTION
COMPARATOR
TECHNOLOGY
BIFET
REF. NO. RECORD
1-37 1000

MANUFACTURER
NATIONAL
PART NUMBER
LF111H
SPECIFICATION
DATA SOURCE
JPL

LDC RAD. TYPE PART QTY. BIAS
7849 2.5MEV EL 3 UNK.

CUM. DOSE (RADS): 0
PARAMETERS MEAN SD 75K 150K 300K 600K
DVOS MV 5.5 2.851 8.5 5.018 13.5 6.863 26.5 16.87
DIOS NA 0 1.040 .1 27.94 .33 144.2 .65 396.7
DIB NA 40. 48.55 90. 9.406 320. 63.25 760. 140.5

REMARKS:

GENERIC PART NUMBER 111

FUNCTION
VOLTAGE COMPARATOR
TECHNOLOGY
BIPOLAR
REF. NO. RECORD
34 1030

MANUFACTURER
NATIONAL
PART NUMBER
LM111F
SPECIFICATION
DATA SOURCE
IRT CORP

LDC RAD. TYPE PART QTY. BIAS
NONE CO-60 8 UNK.

CUM. DOSE (RADS): 0
PARAMETERS MEAN SD 10K 100K 300K
DVOS MV 0.256 0.396 9.460 5.53 15.81 12.55
DIOS NA -32.7 26.50 532.4 510.0 738.0 621.0
IB NA -104. 47.00 -1152 338. -1451 217.
DA DB +3.23 4.88 0.590 2.17 +3.00 2.780

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	VOLTAGE COMPARATOR	BIPOLAR	34	1190

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
R C A	CA111T		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	4	UNK.

CUM. DOSE (RADS):		0		50K		120K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV			- .13		- .320		-1.00		-1.90

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	VOLT COMPARATOR	BIPOLAR	24-22	1280

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM111AH	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8016	CO-60	8	V+=INV-INPUT=OUTPUT=15V, V=-15V, NONINV-INPUT=GND

CUM. DOSE (RADS):		0		20K		30K		50K		100K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
D VOS	MV			0.374	0.123	0.572	0.343	1.870	0.342	5.152	0.500
D IOS	NA			-4.96	6.644	-22.8	16.32	43.90	101.0	81.35	125.1
D IIB	NA			39.35	4.416	82.38	29.00	154.8	75.81	221.0	79.19

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	VOLT. COMPARATOR	BIPOLAR	24-21	1290

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM111AF	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8008	CO-60	8	V+=INV-INPUT=OUTPUT=15V, V-= -15V, NONINV-INPUT=GND

PARAMETERS	0		20K		30K		50K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV	-0.67	0.113	-0.074	0.132	0.015	0.190	-0.391	0.539	
D IOS	NA	-26.4	36.96	-7.76	127.5	-239.	177.7	-140.	208.2	
D IIB	NA	70.81	35.48	199.9	108.6	342.2	112.3	450.3	399.6	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	VOLT. COMPARATOR	BIPOLAR	24-20	1300

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
GENERAL ELECTRIC	LM111CHIP	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	7	V+=INV-INPUT=OUTPUT=15V, V-= -15V, NONINV-INPUT=GND

PARAMETERS	0		10K		30K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV	0.913	0.353	2.936	0.448	8.533	1.063	
D IOS	NA	29.68	4.814	75.34	29.16	93.95	65.15	
D IIB	NA	111.6	13.18	256.6	41.63	710.0	114.9	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	COMPARATORS	BIPOLAR	15	1660

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMICON.	LM111 (10304BHA)		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7810	CO-60	4	V++=15V, V--=-15V, VIN+=GND, VIN=-+5V, VOUT=V+

CUM. DOSE (RADS):									
O									
25K									
50K									
100K									
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN SD
AVOL	500.0	0.0000	476.3	50.89	392.8	97.93	241.5	49.89	
VIO	VO=2	MV	1.693	.9504	2.415	1.740	3.990	4.421	
IIN	NA	24.00	7.036	280.5	44.25	638.8	105.4	1184.	244.7
IIO	NA	-.763	.2750	-30.8	42.92	-52.5	108.2	-43.8	182.3
ICC	MA	2.588	.6088	2.563	.6343	2.600	.6055	2.575	.6292
VSAT	V	.2065	.0064	.2110	.0050	.2228	.0053	.2378	.0046

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	VOLTAGE COMPARATOR	BIPOLAR	805-3	4470

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM111		T1

LDC	RAD. TYPE	PART QTY.	BIAS
7948	CO-60	9	UNK.

CUM. DOSE (RADS):									
O									
12.5K									
25K									
50K									
100K									
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN SD
-IB+	NA	53.11	6.79	204.1	55.70	208.3	46.85	222.2	41.13 243.9 42.14
-IOS	NA	-1.39	1.453	.667	2.960	1.944	5.413	3.555	5.027 5.667 9.173
-VOS	MV	.633	.304	.5052	.3409	.3652	.6388	.222	.7991 -.161 1.404
ISINK	MA	15.28	1.787	15.22	1.833	14.78	1.856	14.56	1.841 13.89 1.835

REMARKS:

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MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AND	AM111H		TRW

CUM. DOSE (RADS):	0			100K			300K			500K		
	MEAN	SD	PARAMETERS	MEAN	SD		MEAN	SD		MEAN	SD	
	0.697	0.618	MV	0.898	0.679		1.428	0.931		1.937	1.235	
	0.911	0.627	MV	1.085	0.681		1.577	0.929		2.056	1.287	
	-0.25	0.506	NA	0.496	0.859		2.030	2.317		3.026	2.756	
	-38.7	0.777	NA	-73.9	4.846		-100.	12.36		-121.	21.60	
	0.072	0.008	NA	3.540	0.885		37.00	16.52		26.00	7.036	

REMARKS: *EP. (1) VO=0.7V. (2) VO=3.7V.

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM11H		TRW

CUM. DOSE (RADS):		0		100K		300K		500K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IOS	PA	14.00	2.850	9.36	2.302	4.500	2.092	3.750	3.228
IB	PA	109.2	19.83	160.4	29.62	350.2	68.40	430.2	211.9
THL	NS	404.4	26.48	406.0	25.96	404.2	23.89	422.4	23.43
TH	NS	278.0	26.87	280.0	28.28	279.0	32.92	274.8	36.12

REMARKS:

GENERIC PART NUMBER: 111

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
111	PRECISION COMPARATR	BIPOLAR	1067	5690

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM111H		TPW

LDC	RAD. TYPE	PART QTY.	BIAS
A7:	CO-60 + N*	10	V+=+15V; V=-15V.

CUM. DOSE(RADS):		*N+100K		*N+300K		*N+500K			
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
VO(SAT)	V	.6942	.0266	.7188	.0257	.7300	.0294	.7352	.0287
VDS	MV	1.435	1.064	1.620	1.044	1.944	.8920	2.274	.9069
IOS	NA	.1630	.5958	.1060	6.159	2.817	4.356	4.450	4.401
IB	NA	-36.4	4.425	-133	13.21	-163	18.79	-184	26.41

REMARKS: *NEUTRON RAD. = 6.E11 N/SQCM.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
112	OP AMP	BIPOLAR	35	1040

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRO	LM112H		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	5	V+=+5V

CUM. DOSE(RADS):		13K		52K		170K		360K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	MV	-1.10		-1.10		-1.20		-1.10		
IIO	NA	0.040	0.050	0.030	0.370	0.370	1.200			
IB	NA	0.900	1.200	2.100	4.800	4.800	10.20			
IQ	MA	0.370	0.370	0.370	0.350	0.350	0.340			
GBW	KHZ	571.0	558.0	552.0	498.0	498.0	474.0			

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
113	REFERENCE DIODE	BIPOLAR	1048 5500

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM113		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7746	CO-60	5	-LEAD @+5V; +LEAD VIA 10K TO GND.

CUM.DOSE(RADS):		0		100K		300K		500K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
VR@1MA	MV	1234.	15.45	1230.	14.99	1226.	14.79	1227.	16.53
VR@12MA	MV	1234.	14.99	1234.	14.91	1231.	14.63	1228.	14.26

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
11331	ANALOG SWITCH	BIFET	37-1 140

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LF11331		IRT

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60 + N	5	YES, BUT EXACT LEVEL UNKNOWN.

CUM.DOSE(RADS):		0		500K*		1.25M**	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
RON ***	OHM	144.5	5.446	142.0	5.033	151.8	9.634
IS(OFF)	NA	1.675	.2217	1.150	.1291	1.725	.3202
ID(OFF)	NA	0.300	0.000	.5750	.0500	1.000	.0816
VINH	V	1.325	.0173	1.360	.0183	1.423	.0263
VINL	V	1.313	.0171	1.313	.0222	1.338	.0150
ICC	MA	3.558	.6323	6.415	1.270	3.580	.6407
---	PARAMETERS	CONT.	ON	REC.	141.		

REMARKS: **1.3E12 N/SQCM. ***2.5E12 N/SQCM. **CONTROL DATA ON RECORDS 144-7

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 GENERIC PART NUMBER: 11331
 FUNCTION: ANALOG SWITCH
 TECHNOLOGY: BIFET
 REF. NO. RECORD: 37-1 141

MANUFACTURER: NATIONAL
 PART NUMBER: LF11331
 SPECIFICATION: DATA SOURCE: *****

LDC RAD. TYPE PART QTY. BIAS *****

CUM. DOSE (RADS): 0 500K* 1.25M**
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD
 IEE MA 1.990 3536 5.025 1.142 2.215 3911
 TON NS 832 131 996 100 986 98
 TOFF NS 84 4 93 9 97 8

PARAMETERS AND DOSAGES CONTINUED, ON REC. 142.
 REMARKS: **1.3E12 N/SQCM. **2.5E12 N/SQCM. CONTINUED FROM RECORD 140.

GENERIC PART NUMBER: 11331
 FUNCTION: ANALOG SWITCH
 TECHNOLOGY: BIFET
 REF. NO. RECORD: 37-2 142

MANUFACTURER: NATIONAL
 PART NUMBER: LF11331
 SPECIFICATION: DATA SOURCE: *****

LDC RAD. TYPE PART QTY. BIAS *****

CUM. DOSE (RADS): 0 144K* 250K**
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD
 RON OHM 146 6 142 5 152 10
 IS(OFF) NA 1.7 0.2 1.15 0.13 1.73 0.32
 ID(OFF) NA 0.32 0.04 0.58 0.05 1.00 0.08
 VINH V 1.328 0.016 1.360 0.018 1.423 0.026
 VINL V 1.314 0.015 1.313 0.022 1.338 0.015
 ICC MA 3.558 0.632 6.415 1.270 3.580 0.641
 ---PARAMETERS CONT. ON REC. 143.
 REMARKS: CONTINUED FROM REC. 141. * + 9.3E11 N/SQCM. ** + 1.1E12 N/SQCM.

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 GENERIC PART NUMBER: 11331
 FUNCTION: ANALOG SWITCH
 TECHNOLOGY: BIFET
 REF. NO. RECORD: 37-2 143
 MANUFACTURER: NATIONAL
 PART NUMBER: LF11331
 SPECIFICATION: DATA SOURCE: *****

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 144K* 250K**

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE	1.990	0.354	5.023	1.14C	2.215	0.391		
TON	NS	710	169	835	259	863	263	
TOFF	NS	73.8	6.3	90.3	5.6	95.0	8.2	

CONTROL DATA
 ON RECORDS
 144 THRU 147.

REMARKS: CONTINUED FROM REC. 142. * + 9.3E11 N/SQCM. ** + 1.1E12 N/SQCM.

 GENERIC PART NUMBER: 11331
 FUNCTION: ANALOG SWITCH
 TECHNOLOGY: BIFET
 REF. NO. RECORD: 37-3 144
 MANUFACTURER: NATIONAL
 PART NUMBER: LF11331
 SPECIFICATION: DATA SOURCE: *****

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 500K** 1.25M**

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
RON	OHM	137	135	138				
IS(OFF)	NA	1.6	0.7	0.7				
ID(OFF)	NA	0.1	0.1	0.1				
VINH	V	1.30	1.37	1.38				
VINL	V	1.27	1.33	1.33				
ICC	MA	3.81	3.82	3.84				

---PARAMETERS CONT. ON REC. 145.
 REMARKS: *CONTROL SAMPLE. *** + 1.3E12 N/SQCM. ** + 2.5E12 N/SQCM.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
11331	ANALOG SWITCH	BIFET	37-3	145

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LF11331		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0 500K* 1.25M**

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE	MA	2.10	2.15	2.15	620	85		
TON	NS	640	630					
TOFF	NS	75	85					

CONTROL DATA
 CONTINUED ON
 RECORD 146.
 REMARKS: CONT. FROM REC. 144. * + 1.3E12 N/SQCM. ** + 2.5E12 N/SQCM.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
11331	ANALOG SWITCH	BIFET	37-3	146

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LF11331		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0 144K* 250K**

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
RON	OHM	137	135	138				
IS(OFF)	NA	1.6	0.7	0.7				
ID(OFF)	NA	0.1	0.1	0.1				
VINH	V	1.30	1.37	1.38				
VINL	V	1.27	1.33	1.33				
ICC	MA	3.81	3.82	3.84				

---PARAMETERS CONT. ON REC. 147.
 REMARKS: CONT. FROM REC. 145. * + 9.3E11 N/SQCM. ** + 1.1E12 N/SQCM.

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

11331 ANALOG SWITCH BIFET 37-3 147

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NATIONAL LF11331

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 144K* 250K**

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

IEE MA 2.10 2.15 2.15 2.15
TON NS 640 630 620
TOFF NS 75 85 85

END OF
CONTROL
DATA.
REMARKS: CONT. FROM REC. 146. * + 9.3E11 N/SQCM. ** + 1.1E12N/SQCM.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

11331 QUAD ANALOG SWITCH BIFET 1045 5470

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NATIONAL LF11331D TRW

LDC RAD. TYPE PART QTY. BIAS

7752 CO-60 5 V+(PIN 12)=+15V; V-(PIN 5)=-15V.

CUM. DOSE(RADS): 0 100K 300K 500K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

RON OHMS 168.8 12.40 173.4 5.000 183.2 19.34 210.0 69.00
IS(OFF) NA 0.430 0.045 1.480 0.303 2.360 1.276 3.340 1.732
T(ON)(1,2) NS 391.0 123.4 520.0 274.2 792.0 752.3 2084. 3045.
T(OFF)(1,2) NS 55.40 0.548 49.00 1.414 47.20 1.789 47.80 2.280
T(ON)(1,3) NS 555.0 222.5 753.0 427.7 1224. 1252. 2354. 3568.
T(OFF)(1,3) NS 47.70 4.577 47.20 4.604 44.60 2.967 40.00 5.099

REMARKS: (1)VIN=+-3V, VR=0, VEE=-15V. (2)VCC=+15V, VS=+5V. (3)VD=-8V, VS=-5V.

GENERIC PART NUMBER: 117

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
117	3-TERM ADJ REGULATR	BIPOLAR	805-4 4480

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM117H		TI

LDC	RAD. TYPE	PART QTY.	BIAS
109	CO-60	6	UNK.

CUM. DOSE (RADS): 0 12.5K 25K 50K 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LOAD REG MV	15.33	.5164	16.33	.5164	17.08	.6646	17.00	.7958		
VOUT V	5.055	.0138	5.063	.0144	5.053	.0147	5.044	.0163		
LINE REG MV	11.43	.7202	12.83	1.025	13.12	1.208	13.48	1.437	14.80	1.700

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
117	VOLTGE REGULATOR	JFET	1006 5050

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM117K		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8112	CO-60	5	VIN=40V(0.1UF TO GND), ADJ VIA 1K TO GND

CUM. DOSE (RADS): 0 50K 100K 200K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LOAD REG MV	6.8	1.3	6.2	0.4	7.4	0.5	8.2	1.3	9.0	1.4
LINE REG MV	3.4	1.9	2.2	0.4	5.8	3.8	9.4	5.0	12.0	5.1
VO V	5.134	0.067	5.133	0.069	5.132	0.070	5.126	0.070	5.120	0.072

REMARKS:

GENERIC PART NUMBER: 117

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GENERIC PART NUMBER: 118

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 GENERIC PART NUMBER 118
 FUNCTION OP AMP
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 38 120

 MANUFACTURER NATIONAL
 PART NUMBER LM118H
 SPECIFICATION IRT CORP

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 8 V+=+15V, V=-15V

CUM. DOSE (RADS): 0
 30K 100K 300K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 D VDS MV 0.460 1.300 6.000 5.230 13.80 11.00
 D IOS NA -83.0 26.90 -96.9 25.50 -99.3 29.50
 D IL NA 81.60 25.10 154.3 40.40 333.3 62.30
 D A DB 8.590 7.160 18.70 4.000 17.50 11.50

REMARKS:

 GENERIC PART NUMBER 118
 FUNCTION OP AMP
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 38 130

 MANUFACTURER ADVANCED MICRO
 PART NUMBER LM118
 SPECIFICATION IRT CORP

LDC RAD. TYPE PART QTY. BIAS
 7510P CO-60 5 V+=+15V, V=-15V

CUM. DOSE (RADS): 0
 13K 52K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 VIO MV 1.000 1.000 1.000 1.000
 IIO NA 1.000 0.600 1.000 0.600
 IB NA 189.0 198.0 189.0 198.0
 IQ MA 6.00 6.10 6.00 6.10
 GBW KHZ 14929 14302

REMARKS:

 GENERIC PART NUMBER: 118

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

118 OP AMP BIPOLAR 25-6 1600

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

AMD LM118 AEROJET

LDC RAD. TYPE PART QTY. BIAS

7510P CO-60 5 V+=15V, V-=-15V, TYPICAL APPLICATION CIRCUIT

CUM.DOSE(RADS): 0 13K 52K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

VIO MV 1 1 1 1 FAIL*
IIO NA 1.0 0.6 0.6 0.6 FAIL*
IB NA 189 198 198 198 FAIL*
IQ MA 6.0 6.1 6.1 6.1 FAIL*
GBW KHZ 14929 14302 14302 14302 FAIL*

REMARKS: *ALL DEVICES HAD FAILED WITH OUTPUT LATCHED TO NEGATIVE SUPPLY VOLTAGE

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

118 OP-AMP BIPOLAR 12 1690

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NATIONAL SEMICONDUCT LM118H MOTOROLA

LDC RAD. TYPE PART QTY. BIAS

7820 CO-60 4 V+=20V, V-=-20V, VIN+=3V, VIN-=VO, RL=2K

CUM.DOSE(RADS): 0 25K 50K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

AVOL K 225.8 52.70 246.5 76.43 263.2 104.1
VIO MV 1.210 1.008 1.100 1.037 1.069 1.078
IIN+ NA 96.25 16.07 127.0 23.92 134.5 39.00
IIO NA -250 1.500 5000 1.732 1.750 2.217
ICC+ MA 6.075 .3594 6.150 .4435 6.100 0.416

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
118	OP AMP	BIPOLAR	805-5	4490

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM118		TI

LDC	RAD. TYPE	PART QTY.	BIAS
*	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	12.5K		25K		50K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
-VOS	800	1.471	802	1.472	774	1.472	786	1.473
IBIAS	143	10.37	147	11.58	163	11.26	197	16.04
-IOS	6	1.517	1.3	2.092	1.14	2.175	12	2.570
AOL	110.5	5.553	113.1	6.061	113.8	5.779	118.4	8.019
								116.0
								8.285

REMARKS: *7940.7902.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
118	OP AMP	BIPOLAR	1007	5060

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM118		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7734	CO-60	4	V+=15V, V--=15V, IN- 10K TO GND, IN+ 6.8K TO GND, *

CUM. DOSE (RADS): 0

PARAMETERS	100K		150K	
	MEAN	SD	MEAN	SD
AVOL	108.3	2.22	109.8	2.87
VOS	-0.94	0.579	-2.76	2.341
-IOS	-0.78	6.53	-8.08	6.00
IB	126.3	21.2	226.8	52.4
			266.5	61.0

REMARKS: * RF=20K, VOUT 10K TO GND.

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 119 DUAL COMPARTOR BIPOLAR 1-86 630

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 ADVANCED MICRODEVICE LM119 -----
 JPL

 LDC RAD. TYPE PART QTY. BIAS

 NONE 2.5MEV EL 4 UNK.

 CUM. DOSE (RADS): 0 75K 150K 300K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 DVOS MV .37 .2220 .53 .3286 .72 .4484
 DIOS NA 5.2 4.254 6.2 7.368 11.6 4.792
 DIB NA 130. 6.127 235. 12.22 390. 16.86
 ISINK MA 19.4 18.16 .4041 17.56 .4203 17.2 .3948

 REMARKS:

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 119 DUAL COMPARTOR BIPOLAR 1-87 640

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 ADVANCED MICRODEVICE LM119 -----
 JPL

 LDC RAD. TYPE PART QTY. BIAS

 NONE 2.5MEV EL 4 UNK.

 CUM. DOSE (RADS): 0 75K 150K 300K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 DVOS MV .445 .3072 .58 .3534 .745 .3632
 DIOS NA 14.7 11.19 17.3 12.44 18.1 6.115
 DIB NA 122. 16.41 198. 17.60 318. 28.67
 ISINK MA 17.2 17.12 .6377 16.52 .5909 16. .6602

 REMARKS:

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GENERIC PART NUMBER: 119

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 GENERIC PART NUMBER 119
 FUNCTION DUAL COMPARATOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1-88 650
 MANUFACTURER
 PART NUMBER
 SPECIFICATION
 ADVANCED MICRODEVICE LM119
 DATA SOURCE JPL

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 4 UNK.

CUM. DOSE(RADS): 0

PARAMETERS	75K		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.47	.4672	.63	.6679	.73	.6564
DIOS NA	12.	7.718	22.	14.32	27.6	27.72
DIB NA	130.	14.66	230.	22.75	370.	36.57
ISINK MA	19.08	.6898	18.56	.7500	18.02	.7703

REMARKS:

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 GENERIC PART NUMBER 119
 FUNCTION DUAL COMPARATOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1-89 660
 MANUFACTURER
 PART NUMBER
 SPECIFICATION
 ADVANCED MICRODEVICE LM119
 DATA SOURCE JPL

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 4 UNK.

CUM. DOSE(RADS): 0

PARAMETERS	75K		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.18	.1549	.16	.1240	.46	.1436
DIOS NA	10.	8.362	13.8	9.180	22.8	13.60
DIB NA	120.	13.29	200.	12.65	320.	15.00
ISINK MA	19.76	.7937	19.37	.8062	19.06	.8266

REMARKS:

 GENERIC PART NUMBER: 119

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
119	DUAL COMPARATOR	BIPOLAR	1-90 670

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNKNOWN.

CUM. DOSE (RADS):	0	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.258	.1290	.288	.1821	.37	.3245
DIOS NA		10.	8.131	20.	12.03	34.5	4.869
DIB NA		130.	8.608	220.	17.09	345.	28.83
ISINK MA		21.05	1.069	20.78	1.102	20.38	1.012

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
119	DUAL COMPARATOR	BIPOLAR	1-91 680

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.21	.0658	.23	.1703	.54	.2044
DIOS NA		8.7	4.835	14.6	6.962	15.8	9.618
DIB NA		130.	6.817	220.	3.930	360.	22.55
ISINK MA	19.3	18.82	.4690	18.44	.4787	18.2	.6238

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-92	690

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):		75K		150K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV		.2	.2058	.9	.2895	.54	.4142	
DIOS NA		5.5	3.579	14.5	9.059	27.5	19.57	
DIB NA		115.	19.21	215.	35.27	355.	61.04	
ISINK MA	15.1	15.62	.5228	15.22	.5627	14.92	.6377	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-93	700

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):		75K		150K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV		.39	.4410	.54	.4832	.69	.3795	
DIOS NA		26.	14.02	42.	15.15	68.	3.940	
DIB NA		172.	30.68	298.	46.93	470.	71.12	
ISINK MA	14.2	14.7	.2082	13.72	.1826	13.39	.1893	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-94	710

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.11	.0202	.24	.0762	.34	.1038
DIOS NA		10.2	6.826	18.3	13.56	29.9	14.50
DIB NA		155.	12.94	275.	25.95	450.	34.60
ISINK MA	14.4	14.29	.3096	14.04	.3403	13.72	.3559

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-95	720

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.31	.3242	.31	.3323	.445	.3909
DIOS NA		16.	6.758	29.5	13.60	46.	28.72
DIB NA		160.	13.63	285.	23.92	465.	31.68
ISINK MA	14.5	14.64	.2872	14.27	.3000	13.99	.2630

REMARKS:

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 GENERIC PART NUMBER: 119

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-96	730

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	75K	150K	300K
PARAMETERS	MEAN	SD	MEAN	SD
DVDS MV	.068	.0641	.108	.0710
DIOS NA	6.4	10.10	10.6	14.12
DIB NA	98.	7.573	175.	14.56
ISINK MA	15.3	15.17	14.99	1.024
				14.72
				1.033

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-97	740

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	75K	150K	300K
PARAMETERS	MEAN	SD	MEAN	SD
DVDS MV	.248	.2409	.412	.2974
DIOS NA	6.4	7.038	11.	9.462
DIB NA	130.	10.55	235.	21.28
ISINK MA	15.14	.4856	14.84	.4272
				14.49
				.5123

REMARKS:

 GENERIC PART NUMBER: 119

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-98	750

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):		0		75K		150K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV				.155	.0856	.26	.1079	.5	.0755
DIOS NA				4.4	3.700	13.6	8.241	18.6	17.10
DIB NA				155.	10.05	270.	19.66	440.	29.59
ISINK MA	16.2			15.92	.1826	15.57	.1915	15.07	.1915

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL COMPARATOR	BIPOLAR	1-99	760

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):		0		75K		150K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV				.2	.1701	.241	.1856	.264	.1246
DIOS NA				5.	3.828	10.8	7.925	16.8	12.62
DIB NA				125.	22.48	225.	43.25	365.	49.91
ISINK MA	15.3			15.44	.2217	15.24	.2217	14.99	.1893

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
119	DUAL COMPARATOR	BIPOLAR	1-100 770

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.074	.0818	.112	.1027	.129	.0721
DIOS NA		5.6	2.231	12.4	7.213	20.4	22.62
DIB NA		92.	30.19	160.	49.98	270.	88.21
ISINK MA	16.4	16.49	1.124	16.34	1.159	16.02	1.208

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
119	DUAL COMPARATOR	BIPOLAR	1-101 780

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM119		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
DVOS MV		.112	.1184	.228	.3156	.28	.3572
DIOS NA		9.5	3.728	21.	10.82	38.	21.18
DIB NA		105.	10.51	195.	15.55	330.	19.94
ISINK MA	14.96	14.96	.5000	14.76	.5000	14.46	.5000

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119	DUAL VOLT COMP	BIPOLAR	25-7	1590

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM119H		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7703P	CO-60	5	UNK.

CUM. DOSE (RADS): 0 18K 100K 420K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO **	PASS*		PASS*		PASS*		PASS*	
IB+	PASS*		PASS*		PASS*		PASS*	
IB-	PASS*		PASS*		PASS*		PASS*	
IIO	PASS*		PASS*		PASS*		PASS*	
ICC	PASS		PASS		PASS		PASS	
IEE	PASS		PASS		PASS		PASS	
TRI	PASS		PASS		PASS		PASS	

REMARKS: **TR2 PASSED ALL DOSES *SOME PARTS MARGINAL OR UNSTABLE IN TEST SETUP

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
119			805-6	4500

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM119		71

LDC	RAD. TYPE	PART QTY.	BIAS
8043	CO-60	5	UNK.

CUM. DOSE (RADS): 0 20.5K 32.9K 57.6K 107.3K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IB+	.354	.0458	.529	.0529	.610	.0621	.735	.0739
-IDS	20.0	19.44	57.2	29.16	66.9	39.22	78.5	62.41
VDS	1.77	.4640	.225	.6605	.120	.4811	.145	.4829

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
120	3-TERM NEG REGULATR	BIPOLAR	805-7	4510

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM120H-5		TI

LDLC	RAD. TYPE	PART QTY.	BIAS
3009	CD-60	6	UNK.

PARAMETERS		0		12.5K		25K		50K		100K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LOAD	REG	19.33	1.329	20.58	1.393	23.17	5.407	25.42	5.737	24.00	2.869
VDOUT	V	4.989	0.210	4.990	0.220	4.992	0.224	4.993	0.227	4.995	0.229
LINE	REG	4.300	0.4858	4.583	0.6616	4.717	0.5980	4.683	0.6969	5.267	0.5391

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
121	PRECISION PRE-AMP	BIPOLAR	1018	5180

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM121		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
013	C0-60	5	V+=15.0V. V-=15.0V.

CUM. DOSE (RADS) :		0		100K		200K		500K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VDS	MV	-0.09	0.354	-0.06	0.360	0.087	0.757	-0.19	1.649	-0.07	1.365
IB	NA	-0.01	0.479	-0.01	0.573	0.319	0.946	0.139	2.401	1.615	3.078
OS	NA	8.504	2.370	18.80	5.188	32.44	7.720	71.16	14.89	105.4	23.99
AVOL	1HZ DB	121.1	0.13	120.6	0.34	121.0	0.69	121.3	0.86	120.8	1.18

REMARKS:

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

1210 12-BIT A/D CONVRTR. CMOS 1-15 1100

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NSC ADC1210 JPL

LDC RAD. TYPE PART QTY. BIAS

7840 CO-60 2 V+ = 10V, V- = -10V. VREF=10.000V.

CUM.DOSE(RADS): 0 20K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
INL (MAX)	NA	0.280			0.615					
INH (MAX)	NA	0.745			0.545					
VOH (MIN)	V	9.97			FAIL					
VOL (MAX)	V	0.65			FAIL					
ISK (MIN)	MA	8.99			FAIL					
ISC (MIN)	MA	15.10			FAIL					
ICC (MAX)	MA	3.77			3.76					

REMARKS: MEAN = WORST-CASE (NOT AVERAGE). PARAMETERS CONTINUED ON RECORD 1101

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

1210 12-BIT A/D CONVRTR. CMOS 1-15 1101

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NSC ADC1210 JPL

LDC RAD. TYPE PART QTY. BIAS

7840 2 V+=10V, V-=-10V, VREF=10.000V.

CUM.DOSE(RADS): 0 20K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE (MAX)	MA	2.00			1.96					
LINEARITY ER-										
ROR (MAX) %		0.020			FAIL					
FULL-SCALE										
ERROR (MAX) %		0.055			FAIL					
ZERO-SCALE										
ERROR (MAX) %		0.031			FAIL					

REMARKS: PARAMETERS CONTINUED FROM RECORD 1100; CONTINUED ON 1102.

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GENERIC PART NUMBER 1210
FUNCTION 12-BIT A/D CONVRTR.
TECHNOLOGY CMOS
REF. NO. RECORD 1-15 1102

MANUFACTURER NSC
PART NUMBER ADC1210
SPECIFICATION
DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 20K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
CLOCK FREQUENCY (MINIMUM) KHZ 200 FAIL

REMARKS: CONTINUATION FROM RECORD 1101.

GENERIC PART NUMBER 1210
FUNCTION 12-BIT A/D CONVRTR.
TECHNOLOGY CMOS
REF. NO. RECORD 1-16 1110

MANUFACTURER NSC
PART NUMBER ADC1210
SPECIFICATION JPL
DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS
7840 CO-50 2 V+=10V, V-= -10V, VREF=10.000V.

CUM. DOSE (RADS): 0 3K 7K 15K 20K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
INL (MAX) NA 0.195 0.370 0.325 0.370 FAIL
INH (MAX) NA 0.810 0.765 0.635 0.625 FAIL
VOH (MIN) V 9.97 9.97 9.94 9.76 FAIL
VOL (MAX) V 0.700 0.500 20.0 107 FAIL
ISK (MIN) MA 9.21 9.39 8.23 8.28 FAIL

--PARAMETERS CONT. ON REC. 1111.
REMARKS: *MEAN=WORST-CASE VALUE (NOT AVG.) @V+=10V, V-= -15V, VREF=10.000V.

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 GENERIC PART NUMBER 1210
 FUNCTION 12-BIT A/D CONVRTR. CMOS
 TECHNOLOGY 1-16
 REF.NO. RECORD 1111
 MANUFACTURER NSC
 PART NUMBER ADC1210
 SPECIFICATION
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0
 PARAMETERS
 MEAN SD 3K 7K 15K 20K
 ISC(MIN) MA 14.90 14.53 14.04 12.95 FAIL
 ICC(MAX) MA 3.87 3.91 5.23 10.54 FAIL
 IEE(MAX) MA 2.13 2.14 2.11 2.10 FAIL
 LINEARITY-
 ERROR(MAX) % 0.028 0.320 0.125 1.070 FAIL
 FULL-SCALE
 ERROR(MAX) % 0.021 0.240 0.409 2.83 FAIL
 REMARKS: CONTINUATION FROM RECORD 1110. PARAMETERS CONTINUED ON RECORD 1112.

 GENERIC PART NUMBER 1210
 FUNCTION 12-BIT A/D CONVRTR. CMOS
 TECHNOLOGY 1-16
 REF.NO. RECORD 1112
 MANUFACTURER NSC
 PART NUMBER ADC1210
 SPECIFICATION
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0
 PARAMETERS
 MEAN SD 3K 7K 15K 20K
 ZERO-SCALE
 ERROR(MAX) % 0.131 0.143 0.195 0.440 FAIL
 CLOCK
 FREQUENCY (MIN) KHZ 200 200 200
 -- END OF
 PARAMETERS
 REMARKS: CONTINUATION FROM RECORD 1112.

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 GENERIC PART NUMBER: 122
 FUNCTION: PRECISION TIMER
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1016 5160

 MANUFACTURER: NATIONAL
 PART NUMBER: LM122
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 8121 CO-60 5 VCC=5.3V, 50MS PULSE (2S. REP.) TO TRIGGER.

CUM. DOSE(RADS): 0 20K 50K 100K 200K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VOL V 0.272 0.005 0.282 0.005 0.290 0.006 0.300 0.007 0.312 0.008
 PW S 108.4 0.77 102.0 2.30 98.88 2.77 94.45 4.64 89.08 5.46
 PW US 983.2 6.50 974.9 6.06 975.6 5.97 980.1 6.58 988.6 6.01

REMARKS:

 GENERIC PART NUMBER: 123
 FUNCTION: 6-CH FET-SW DRIVER
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1047 5490

 MANUFACTURER: SILICONIX
 PART NUMBER: D123AL
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 7606 CO-60 5 VEE(PIN 1)=-5V; PIN 2 VIA 5K TO +5V; PIN 13,14 *

CUM. DOSE(RADS): 0 100K 300K 500K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VO(SAT)(1) MV 15.38 21.39 18.53 24.76 23.18 31.37 26.44 35.36
 IIN(1) MA 0.905 0 0.900 0 0.906 0.002 0.899 0.002
 IINL(2) NA 8.625 0.566 13.80 1.135 31.55 4.272 42.20 6.563
 VO(SAT)(2) MV 139.5 228.2 224.8 177.3 178.4 247.2 242.1 191.6
 ION(2) NA 0.288 0.034 0.571 0.098 2.540 1.893 6.790 6.314

REMARKS: (1)VEE=-5V. (2)VEE=-20V. *TO GND VIA 12.5K.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
124	OP AMP	BIPOLAR	40	110

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM124F		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	4	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	30K		60K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	-6910	.1300	1.570	.2390	13.88	3.500
D IOS	-.375	.1160	-1.92	5.420	-27.8	32.60
D IL	-26.0	7.130	-62.0	16.50	-242.	69.40
D A	-.775	1.280	-2.28	2.760	-11.3	.4270

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
124	OP-AMP	BIPOLAR	24-25	1230

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM124F	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8016	CO-60	4	V+=15V, V-=GND, INV-INPUT=OUTPUT, NONINV-INPUT=5V

CUM. DOSE (RADS): 0

PARAMETERS	30K		100K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	C.511	0.170	2.281	0.689	9.493	3.947
D IOS	-.411	2.502	-3.74	15.88	7.315	47.32
D IIB	26.80	6.938	119.9	20.20	201.7	36.13

REMARKS:

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 GENERIC PART NUMBER: 124

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
124	OP-AMP	BIPOLAR	24-24	1260

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	LM124	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7852	CO-60	4	V+=15V, V-=GND, INV-INPUT=OUTPUT, NONINV-INPUT=5V

CUM. DOSE (RADS): 0

PARAMETERS	30K		100K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD
D VDS	0.462	0.205	1.268	0.245	5.703	1.314
D IOS	-0.132	3.807	-8.38	34.03	-25.4	71.85
D IIB	22.86	4.489	65.05	28.47	207.6	46.12

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
124	QUAD OP AMP	BIPOLAR	99	1860

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NS	LM124J		WESTINGHOUSE

LDC	RAD. TYPE	PART QTY.	BIAS
B8113	CO-60	5	V+=+15V, V-= -15V

CUM. DOSE (RADS): 0

PARAMETERS	150K		400K	
	MEAN	SD	MEAN	SD
VIO V=5	1.282	.8204	.4451	.9587
IIO V=5	.6650	5.676	-1.36	6.187
IIB V=5	17.54	4.002	87.73	7.331
AVS V=15	199.1	31.14	149.7	12.00
ICC V=30	1.648	.0370	1.526	.0336
AVO V=30	84.19	3.945	69.97	3.144

REMARKS:

 GENERIC PART NUMBER: 124

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
124	LOW PWR QUAD OP AMP	BIPOLAR	805-8	4520

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM124		TI

LDC	RAD. TYPE	PART QTY.	BIAS
8009	CO-60	4	UNK.

CUM.DOSE(RADS): 0 12.5K 25K 50K 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
AOL	105.9	1.699	112.6	2.752	109.4	5.503	107.7	4.114	100.3	5.092	
-(IB+)	NA	12.03	5.976	42.03	9.928	62.06	15.25	91.19	27.39	119.4	39.72
VDS	MV	7163	1.131	.8638	1.211	.6550	1.241	.1663	1.330	-.988	2.042
-(IOS)	NA	1.956	2.986	1.472	4.215	1.875	3.798	-1.81	11.89	2.031	17.60

REMARKS: *NEGATIVE OF PARAM. VALUE USED TO CONSERVE SPACE (FOR SIGNIFICANCE).

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
124	OP AMP	BIPOLAR	1008	5070

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM124D		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8020	CO-60	8	VIN=0.6V(P-P)1KHZ, RIN=10K, IN+ VIA 9.1K TO GND, *

CUM.DOSE(RADS): 0 100K 200K 500K 1MEG

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
AVOL 1HZ	DB	111.3	0.63	111.6	0.52	111.2	0.50	110.3	0.52	108.0	1.47
AVOL 1KHZ	DB	57.68	0.55	57.06	0.34	56.61	0.27	57.24	0.80	58.23	1.45
AVOL 5KHZ	DB	43.91	0.30	43.29	0.22	43.04	0.29	43.58	0.87	44.48	1.48
IB	NA	0.269	2.082	-0.22	2.095	-0.34	2.565	0.154	3.218	0.823	4.551
VDS	NA	-23.7	2.651	-45.2	2.276	-66.1	3.552	-114.	10.18	-169.	26.07
	MV	-0.07	0.569	-0.79	0.542	-1.56	0.550	-4.09	0.547	-6.38	0.543

REMARKS: *RF=100K, VOUT TO GND VIA 10K, V+=15V, V--=15V.

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 GENERIC PART NUMBER: 124

 FUNCTION: 4-CHAN. ANALOG SW. MOS
 TECHNOLOGY: MOS
 REF. NO. RECORD: 1024A 5260

 MANUFACTURER: SILICONIX
 PART NUMBER: G124AL
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 7728 CO-60 5 VCC=P=G1=G3=D=GND, G2=G4=-20V, S1-S4 VIA 20K TO -20V

CUM.DOSE(RADS): 0 50K 100K 200K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VGS1(TH)* V -2.39 .0597 -8.64 .1734 -9.78 .2329 -10.9 .2293 -11.9 .2709
 VGS2(TH)* MV -2363 48.9 -4068 59.3 -4732 81.7 -5286 101.6 -5640 111.6
 VGS3(TH)* V -2.32 .0734 -8.49 .1723 -9.59 .2280 -10.7 .2485 -11.7 .3045
 VGS4(TH)* MV -2344 76.3 -4044 73.0 -4178 366.0 -5246 97.9 -5600 103.7
 RDS1(ON)** 0 53.64 2.592 63.38 3.451 69.12 4.078 74.20 4.320 80.12 5.026
 RDS2(ON)** 0 53.66 2.529 57.62 2.734 58.94 2.899 59.52 2.941 60.32 2.964
 RDS3(ON)** 0 54.32 2.054 63.98 2.636 69.44 3.129 74.48 3.685 79.82 4.125
 REMARKS: *VD=-10V. **VGS=-30V. DATA CONTINUED ON RECORD 5261.

 GENERIC PART NUMBER: 124

 FUNCTION: 4-CHAN. ANALOG SW. MOS
 TECHNOLOGY: MOS
 REF. NO. RECORD: 1024A 5261

 MANUFACTURER: SILICONIX
 PART NUMBER: G124AL
 SPECIFICATION: DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 50K 100K 200K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 RDS4(ON)** 0 55.10 2.165 59.18 2.408 60.42 2.504 60.98 2.427 61.54 2.660
 IS1(OFF)* PA 1.2 .3 131.4 8.2 386.0 37.2 764.0 79.6 1266 124.8
 IS2(OFF)* PA 1.2 .5 30.4 10.4 57.8 6.9 104.0 10.9 152.2 16.3
 IS3(OFF)* PA 1.3 .7 127.2 5.6 376.0 26.1 774.0 63.9 1282 116.9
 IS4(OFF)* PA 1.3 .2 28.6 2.7 57.4 4.9 104.6 5.1 149.4 14.2
 ID(OFF)* PA 6.3 .3 326 15.2 774 31.3 1574 84.4 2270 152.5

REMARKS: CONT. FROM REC. 5260. **VGS=-30V. *VDD=-20V. CONTINUED ON RECORD 5262.

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C-2

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
124	4-CHAN. ANALOG SW.	MOS	1024A 5262

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICONIX	G124AL		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS):	G	50K		100K		200K		300K			
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD		
PARAMETERS											
IGSS1*	PA	.5	.1	17.6	1.1	36.4	1.8	70.6	2.7	100.6	6.1
IGSS2*	PA	.4	.1	34.4	2.5	76.0	4.5	141.8	5.8	191.2	9.0
IGSS3*	PA	.4	.1	20.0	1.0	39.6	2.7	77.2	3.1	111.6	6.3
IGSS4*	PA	.4	.1	35.4	2.4	78.4	4.8	144.6	7.3	195.0	7.5

REMARKS: CONTINUATION FROM RECORD 5261. *VGS=-20V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
126	ANALOG GATE SWITCH	BIFET	8 1710

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICONIX	DG126AL		MOTOROLA

LDC RAD. TYPE PART QTY. BIAS

7826 CO-60 4 V+=13V, V=-10V, PINS: 13=3.7V, 8,14=13V, 13=3.7V

CUM. DOSE (RADS):	O	90K		270K		1.35MEG			
		MEAN	SD	MEAN	SD	MEAN	SD		
PARAMETERS									
RDS(ON)	OHM	23.79	2.597	22.45	1.878	22.85	1.813	23.63	1.755
ID(OFF)	UA	.0100	0.0000	.0100	0.0000	.0113	.0035	.0225	.0205
ID+IS(ON)	UA	.0100	0.0000	.0100	0.0000	.0100	0.0000	.0100	0.0000
ICC	UA	.0100	0.0000	8.750	10.03	18.11	10.46	13.54	10.19
IEE	UA	.0100	0.0000	8.750	10.03	18.14	10.47	13.74	10.22
IR	UA	.0100	0.0000	.0100	0.0000	.0100	0.0000	.0100	0.0000

REMARKS:

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 GENERIC PART NUMBER: 129

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
129	SWITCH	BIFET	1-29 1060

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICONIX DEVICES	DG129		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7738	CO-60	6	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		15K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IS(OFF) NA	.498	1.05	2.9	.5382	6.2	.6314	28.	6.676
ID(OFF) NA	.653	1.3	3.4	1.038	6.2	1.365	28.	5.870
ID+IS NA	1.02	1.4	.88	1.086	.52	.2202	1.35	.2694
RDS(ON) OHM	28.3	30.	30.	1.818	29.9	1.944	30.5	1.835

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
129	SWITCH	BIFET	1-30 1070

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICONIX	DG129		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7738	CO-60	6	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IS(OFF) NA	0.877	1.200	2.200	1.136	2.450	.8886	3.400	.8430
ID(OFF) NA	0.943	1.450	2.000	.9579	2.450	.8589	3.000	.5970
ID + IS(ON) NA	1.100	2.000	1.350	1.449	.7600	.5913	1.100	.2832
RDS(ON) OHMS	28.20	31.00	31.50	1.970	31.00	1.808	32.00	1.996

REMARKS:

 GENERIC PART NUMBER: 129

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
129	FET SWITCH	BIFET	1-29	2940

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICONIX	DG129		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7738	CO-60	6	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IS(OFF) NA	.498		2.9	.5382	6.2	.6314	14	1.478
ID(OFF) NA	.653		3.4	1.038	6.5	1.365	14.5	2.028
ID(ON)+IS(ON) NA	1.02		.88	1.086	.54	.2202	.70	.6112
RDS(ON) OHM	28.3		30.0	1.818	29.7	1.944	30.0	2.064
							1.4	.2694
							30.3	1.835

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
129	PRECISION REFERENCE	BIPOLAR	1046	5480

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM129BH		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7628	CO-60	5	PIN 1 VIA 5K TO +15V; PIN 2 TO GND.

CUM. DOSE (RADS): 0

PARAMETERS	100K		200K	
	MEAN	SD	MEAN	SD
V2	6.914	0.061	6.916	0.061

(@I2=2MA)

REMARKS:

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 136 2.5V REFERENCE DIOD BIPOLAR 805-9 4530

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 NSC LM136A TI

 LDC RAD. TYPE PART QTY. BIAS

 125 CO-60 6 UNK.

 CUM.DOSE(RADS): 0 12.5K 25K 50K 100K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 DELTA(VBE) MV 3.600 .1673 3.783 .2552 4.192 .2557 4.517 .2787 4.750 .3146
 VBE V 2.392 .0040 2.478 .0040 2.477 .0040 2.477 .0057 2.477 .0057

 REMARKS:

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 139 QUAD VOLT COMPAR BIPOLAR 29 150

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 RCA CA139G IRT CORP

 LDC RAD. TYPE PART QTY. BIAS

 UNK. CO-60 10 VCC=12V, VO=1.4V

 CUM.DOSE(RADS): 0 1K 5K 20K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 ICC UA 727.4 50.92 728.0 50.05 730.2 49.35 721.0 46.41
 VDS MV -746 2.370 -749 2.769 -761 2.362 -772 2.354
 IB MA 77.20 11.98 77.55 11.98 79.84 11.80 87.55 11.03
 IOS MA -3.62 3.303 -3.57 3.442 -3.69 3.449 -3.32 3.405
 AOL DB 105.7 3.133 105.9 1.379 105.3 3.796 105.6 3.684

 REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARATOR	BIPOLAR	1-102	790

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
*	CO-60	4	UNK.

CUM. DOSE (RADS)	O	75K		250K		750K		2.5MEG	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.34	.1484	.72	.1731	.96	.5202	1.96	1.296
DIOS NA		8.	2.099	29.	11.67	37.	13.11	24.5	26.50
DIB NA		105.	37.00	160.	47.55	260.	47.32	485.	48.67
ISINK MA	12.9	11.85	.1000	11.	.2062	9.8	.6185	7.4	1.037

REMARKS: *7745DP.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARATOR	BIPOLAR	1-103	800

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS)	O	75K		250K		750K		2.5MEG	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		0	.1461	0	.2842	0	.4186	.33	637.1
DIOS NA		2.	2.027	6.	4.204	24.	7.353	88.	55.02
DIB NA		120.	13.19	240.	18.47	440.	24.16	660.	473.7
ISINK MA	12.	9.2	.3512	7.6	.2598	5.6	.2000	2.7	.5694

REMARKS:

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GENERIC PART NUMBER: 139

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-104 810

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	150K		300K		750K		2.5MEG	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVDS MV		.5	.1880	.75	.6469	.8	.8442	2.6	1.050
DIOS NA		12.	10.42	6.	7.853	28.	11.45	108.	27.13
DIB NA		260.	33.34	320.	47.41	470.	87.11	880.	182.7
ISINK MA		8.5	.5809	7.65	.6716	6.2	.8340	4.8	1.532

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-105 820

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		250K		750K		2.5MEG	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVDS MV		.55	.1104	.8	.1356	2.3	.3312	3.7	.4987
DIOS NA		2.	1.153	4.	3.346	22.	10.87	112.	28.89
DIB NA		165.	38.68	240.	48.46	400.	63.93	780.	128.4
ISINK MA		10.5	.5012	9.	.6170	6.9	.6522	4.	.5552

REMARKS:

GENERIC PART NUMBER: 139

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-106 830

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS) :	0		75K		250K		750K		2.5MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
DVDS MV			.75	.6134	.55	.3796	1.35	.6880	3.75	.4821
DIDS NA			2.	6.703	3.	2.015	25.	2.793	108.	13.21
DIB NA			108.	30.28	206.	34.89	402.	54.43	802.	114.7
ISINK MA	13.2		10.55	1.520	9.15	1.321	7.	.9597	10.15	1.297

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-107 840

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS) :		0		75K		150K		300K		600K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVDS	MV			.34	.1468	.17	.1178	.15	.1058	.49	.2317
DIDS	NA			2.4	1.899	3.2	2.069	5.	3.025	10.9	3.754
DIB	NA			68.	15.45	104.	14.00	164.	12.52	252.	15.40
ISINK	MA	17.2		16.35	.3162	15.25	.3500	13.8	.6245	11.8	.8963

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-108 850

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM.DOSE(RADS):	0	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.28	.0603	.42	.0909	.7	.1645	1.1	.2467
DIOS NA		1.5	.5277	2.6	.8614	4.6	1.170	10.4	2.174
DIB NA		76.	2.813	112.	6.415	164.	11.40	256.	19.89
ISINK MA	16.7	15.15	.2630	14.55	.3403	13.3	.3500	11.75	.2944

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-109 860

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM.DOSE(RADS):	0	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.26	.0451	.39	.0635	.64	.0928	10.5	.1415
DIOS NA		2.2	.6053	3.2	1.176	5.9	1.870	12.8	2.161
DIB NA		75.	5.034	110.	7.456	170.	10.97	270.	16.95
ISINK MA	16.9	15.45	.7544	14.7	.8756	13.7	.6752	12.15	.5852

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
139	QUAD COMPARATOR	BIPOLAR	1-110 870

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

PARAMETERS	O		75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVDS MV			2	1149	28	1553	41	2722	69	3880
DIOS NA			1.2	7065	2.4	2.036	4.8	1.705	10.2	3.307
DIB NA			85	77.32	175	67.26	230	66.65	310	63.83
ISINK MA	16.6		14.3	1.135	13.4	1.408	12.4	1.464	10.9	1.415

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
139	QUAD COMPARATOR	BIPOLAR	1-111 880

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

PARAMETERS	O		75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVDS MV			26	0839	4	1251	64	1677	1.2	2359
DIOS NA			1.2	5248	1.65	9884	3.2	9095	8	2.438
DIB NA			80	10.20	120	13.32	175	19.07	260	27.46
ISINK MA	17.2		15.7	7274	15.4	9592	14.	6602	12.6	6245

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
139	QUAD COMPARTOR	BIPOLAR	1-112	890

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.25	.1261	.46	.2086	.7	.3171	.88	.2617
DIOS NA	1.2	.8929	2.8	.6467	4.2	1.730	8.4	2.601
DIB NA	86.	25.94	82.	83.78	188.	29.48	272.	20.46
ISINK MA	14.9	13.35	12.65	.8221	11.7	.8426	10.1	.9798

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
139	QUAD COMPARTOR	BIPOLAR	1-113	900

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	.25	.0556	.38	.0916	.61	.1463	1.	.2225
DIOS NA	1.8	1.067	3.2	1.530	6.	2.022	12.4	3.847
DIB NA	85.	15.57	120.	19.53	135.	90.70	280.	34.22

REMARKS:

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GENERIC PART NUMBER: 139

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARTOR	BIPOLAR	1-114	910

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		26	.0756	.45	.1345	.72	.2062	1.16	.3095
DIOS NA		1.1	.0776	1.8	.5242	3.6	.6388	9.1	.7297
DIB NA		60	19.55	92	23.40	148	29.30	236	37.41
ISINK MA	15.7	14.6	1.455	13.8	1.367	12.8	1.383	11.3	1.452

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARTOR	BIPOLAR	1-115	920

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		3	.0418	.45	.0592	.74	.1268	1.18	.1839
DIOS NA		1.8	.0660	2.1	.3025	4.4	.8179	11.2	1.492
DIB NA		82	10.08	120	14.98	178	22.87	270	35.50
ISINK MA	15.2	13.5	.6652	12.7	.5909	11.5	.3697	9.9	.2062

REMARKS:

GENERIC PART NUMBER: 139

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-116 930

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVDS MV		.22	.0471	.37	.1055	.58	.1848	.9	.2877
DIOS NA		1.5	.7684	2.4	1.225	3.8	1.521	8.4	2.784
DIB NA		82	13.15	116	17.70	170	24.80	260	36.27
ISINK MA	16.6	15.35	.4349	14.8	.6131	13.95	.7848	12.65	.8813

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-117 940

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVDS MV		.2	.1091	.5	.1069	1.49	1.473	3.4	4.405
DIOS NA		.7	.3762	1.	.5866	2.	1.267	89	3.116
DIB NA		70	13.65	110	18.43	170	25.13	270	35.26
ISINK MA	14.5	13.6	.3594	13.1	.2500	12.3	.3559	11.1	.2828

REMARKS:

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 139 QUAD COMPARTOR BIPOLAR 1-118 950

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 ADVANCED MICRODEVICE LM139 JPL

LDC RAD. TYPE PART QTY. BIAS

 NONE 2.5MEV EL 4 UNK.

CUM.DOSE(RADS): 0 75K 150K 300K 600K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 DVOS MV .29 .0445 .44 .0926 .67 .1743 1.5 .2882
 DIOS NA 1.6 1.432 2.4 2.721 4.4 2.935 10.2 4.163
 DIB NA 95 5.553 130 7.461 192 14.55 295 24.87
 ISINK MA 15 14 .7632 13.6 .6551 12.9 .6782 11.85 .7047

REMARKS:

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 139 QUAD COMPARTOR BIPOLAR 1-119 960

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 ADVANCED MICRODEVICE LM139 JPL

LDC RAD. TYPE PART QTY. BIAS

 NONE 2.5MEV EL 4 UNK.

CUM.DOSE(RADS): 0 75K 150K 300K 600K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 DVOS MV .25 .0525 .39 .0848 .62 .1241 1.2 .1503
 DIOS NA 1.5 .9292 2.5 1.064 4.4 1.335 10.2 2.450
 DIB NA 79 9.282 112 9.800 168 10.39 258 12.11
 ISINK MA 16.2 14.95 1.652 14.35 1.821 13.7 2.169 12.5 2.629

REMARKS:

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GENERIC PART NUMBER: 139

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-120 970

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADVANCED MICRODEVICE	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K		150K		300K		600K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.2	.0993	.6	.6119	2.6	3.974	5.3	8.337
DIOS NA		.8	.6920	1.7	1.520	5.2	2.434	13.6	8.020
DIB NA		82.	8.747	120.	12.53	185.	18.42	285.	24.77
ISINK MA	15.	14.54	1.024	14.22	.9832	15.	1.014	13.18	.8103

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARTOR	BIPOLAR	1-121 980

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMI.	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2M MEV EL	4	UNK.

CUM. DOSE (RADS):	O	12K		31K		62K		125K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
DVOS MV		.0004	.0001	.0008	.0002	.0108	.0079		FAIL
DIOS NA		.023	.0055	.006	.0041	.047	.0127		FAIL
DIB NA		.1	.0167	.205	.0371	.31	.0360		FAIL
ISINK MA	11.4	6.95	.5389	4.55	.5196	3.3	.4329		FAIL

REMARKS:

GENERIC PART NUMBER: 139

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARATOR	BIPOLAR	1-122 990

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PRECISION MONOLITHIC	LM139		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7924	2.5MEV EL	4	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS MV	9.97	.8	2.5	.7262	4.25	.9473	4.35	1.599
DIOS NA		12.	78.	47.36	175.	58.23	245.	45.45
DIB NA		62.	53.00	81.93	158.	66.92	162.	85.47
ISINK MA		6.15	.5560	4.35	.5188	3.4	.4041	3.
								.4717

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	VOLT COMPARATOR	BIPOLAR	24-26 1240

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM139F	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8011	CO-60	8	V+=NONINV-INPUT(3,4)=INV-INPUT(1,2)=OUTPUT=15V *

CUM.DOSE(RADS): 0

PARAMETERS	30K		100K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD
D VOS MV	-1.155	0.728	-5.44	2.033	-.020	4.864
D IOS NA	-1.108	2.042	-5.94	20.83	-3.93	172.1
D IIB NA	58.25	11.24	246.4	101.7	660.6	155.8

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	COMPARATOR-VOLT	BIPOLAR	14	1670

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM139		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7742	CO-60	3	2 DEVICES VDD=36V, VCC=30V; 1 DEVICE VDD=7V, VCC=5V

CUM. DOSE(RADS): 0 50K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL V=15 K	372.2	110.0	268.8	100.3				
IIO V=7 NA	-0.088	1.002	-1.292	1.925				
IIO V=30 NA	-1.108	.8393	-2.242	1.403				
IIN V=7 NA	26.18	3.706	47.42	2.891				
ICC V=7 MA	.7467	.0231	.7167	.0252				

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARATOR	BIPOLAR	11	1700

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICON GENERAL	SG139F		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7911	CO-60	9	UNBIASED.

CUM. DOSE(RADS): 0 10K 50K 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL V=15 K	274.8	108.4	206.3	77.90	125.8	47.88	91.70	35.81
ICC V=15 MA	.9089	.1629	.8367	.1481	.7178	.1336	.6544	.1280
IIO V=7 MV	4.423	3.256	4.275	3.159	3.558	2.688	3.516	2.532
ICC V=7 MA	.8567	.1494	.8067	.1370	.6833	.1068	.6189	.1081
IIN V=7 NA	76.36	6.016	104.4	12.86	136.5	28.67	142.8	24.70
IIO V=7 MA	3.931	4.389	5.194	4.748	6.278	5.715	5.278	7.884

REMARKS:

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 GENERIC PART NUMBER: 139
 FUNCTION: QUAD COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO.: 100
 RECORD: 1770

 MANUFACTURER: NS
 PART NUMBER: LM139N
 SPECIFICATION: WESTINGHOUSE
 DATA SOURCE: WESTINGHOUSE

 LDC RAD. TYPE PART QTY. BIAS
 8023M CO-60 5 V+=+5V, V-=GND

CUM. DOSE (RADS): 0 400K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIOS MV .0810 .2845 .0415 .8430
 IIB NA -.279 .0565 -.338 .0079
 IOS NA .0300 .3789 .6905 .4825

REMARKS:

 GENERIC PART NUMBER: 139
 FUNCTION: QUAD COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO.: 100
 RECORD: 1780

 MANUFACTURER: FAIRCHILD
 PART NUMBER: LM139
 SPECIFICATION: WESTINGHOUSE
 DATA SOURCE: WESTINGHOUSE

 LDC RAD. TYPE PART QTY. BIAS
 8025 CO-60 5 V+=+5V, V-= TIED TO GND

CUM. DOSE (RADS): 0 400K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIOS MV .0370 .1943 -.116 1.911
 IIB NA .193 .0162 -.119 .4780
 IOS NA .0090 .0329 .7395 1.714

REMARKS:

139

 GENERIC PART NUMBER: 139

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD
 139 QUAD COMPARATOR BIPOLAR 301-4 1790

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE
 A M D LM139AF FORD A/S CORP.

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 5 V+=+15V

CUM. DOSE (RADS): 0 160K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 D VIO MV -.080 .2695
 D IIO NA 2.180 .8843
 D IB+ NA 89.02 29.01
 D V(SAT) V .0100 .0071

REMARKS:

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD
 139 QUAD COMPARATOR BIPOLAR 301-3 1800

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE
 AMD LM139AF FORD A/S CORP.

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 5 V+=+15V

CUM. DOSE (RADS): 0 160K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 D VIO MV 19.20 .0217
 D IIO NA .3000 1.551
 D IB+ NA 69.20 2.851
 D V(SAT) V .0020 .0045

REMARKS:

 GENERIC PART NUMBER: 139

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARATOR	BIPOLAR	301-1 1810

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM139		FORD A/S CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	V+=+15V

CUM. DOSE (RADS): 0 160K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
D V10 MV			.2040	.4913		
D I10 NA			3.260	2.810		
D IB+ NA			65.42	9.128		
D V(SAT) V			.0280	.0148		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
139	QUAD COMPARATOR	BIPOLAR	301-2 1820

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM139AF		FORD A/S CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	4	V+=+15V

CUM. DOSE (RADS): 0 160K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
D V10 MV			-.065	.0265		
D I10 NA			-.600	.5477		
D IB+ NA			55.20	5.719		
D V(SAT) V			.0125	.0096		

REMARKS:

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GENERIC PART NUMBER: 139

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARTOR	BIPOLAR	401-3	1830

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
UNK.	LM139		INSAT PCC 860

LDC	RAD. TYPE	PART QTY.	BIAS
79230	CO-60	5	V++15V

PARAMETERS	0		16K							
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	MV	-1.13	0.34	-1.01	0.34					
IIO	NA	-0.72	0.27	-1.22	0.38					
IB+	NA	34.72	3.71	86.80	11.51					
VSAT	V	0.222	0.016	0.216	0.011					

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
139	QUAD COMPARTOR	BIPOLAR	805-10	4540

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM139A		TI

LDC	RAD. TYPE	PART QTY.	BIAS
8021	CO-60	6	UNK.

PARAMETERS		0		12.5K		25K		50K		100K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
-(IB+)	NA	21.50	3.03	61.33	5.483	89.33	6.443	135.0	16.03	175.8	23.97
IOS	NA	-208	2.179	292	2.739	1.117	4.979	2.825	5.718	2.167	12.10
VOS	MV	-0.29	.9265	-0.67	.9815	0.166	1.041	1416	1.219	1498	3.706
ISINK	MA	11.50	2.067	10.71	2.126	8.833	2.125	7.208	2.179	5.980	2.238

REMARKS: *NEGATIVE OF PARAM. VALUE USED TO CONSERVE SPACE (FOR SIGNIFICANCE).

GENERIC PART NUMBER: 139

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 GENERIC PART NUMBER: 139
 FUNCTION: QUAD VOLT COMPARATR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1011 5100

 MANUFACTURER: PMI
 PART NUMBER: PM139A
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 8147 CO-60 5 V+=12V, V-=GND=NON-INV INPUT. INV IN=1V. OUTPUT=NC.

CUM. DOSE (RADS): 0 30K 60K 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOS (A)*	0.46	0.31	0.60	0.54	0.62	0.57	1.18	0.91
IOS (A)	5.98	1.59	2.69	2.38	11.03	7.20	44.44	29.97
IB (A)	-72.8	15.60	-166.	29.93	-268.	62.52	-380.	158.9
VOS (B)	1.1	0.8	1.0	0.5	0.9	0.4	0.9	0.4
IOS (B)	4.51	2.23	2.45	1.18	15.29	13.00	30.45	30.07
IB (B)	-78.8	16.4	-152.	25.	-204.	44.2	-222.	64.

REMARKS: *4 COMPAR'S: A, B, C, D. DATA CONTINUED ON RECORD 5101.

 GENERIC PART NUMBER: 139
 FUNCTION: QUAD VOLT COMPARATR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 5101

 MANUFACTURER: PMI
 PART NUMBER: PM139A
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 30K 60K 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOS (C)*	0.5	0.2	0.5	0.1	0.7	0.2	1.1	0.4
IOS (C)	2.45	1.53	7.03	4.70	26.23	13.74	60.28	19.47
IB (C)	-76.6	16.2	-156.	27.	-226.	55.	-271.	105.
VOS (D)	0.50	0.51	0.66	0.38	0.92	0.33	1.32	0.76
IOS (D)	4.57	0.69	1.63	1.38	5.48	6.02	21.26	19.73
IB (D)	-71.8	16.4	-153.	32.	-258.	77.	-380.	164.

REMARKS: *DATA CONTINUED FROM RECORD 5100.

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GENERIC PART NUMBER: 139

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 GENERIC PART NUMBER: 139
 FUNCTION: QUAD COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1051 5530
 MANUFACTURER: PART NUMBER: SPECIFICATION: DATA SOURCE: TRW
 FAIRCHILD UA139DB

LDC RAD. TYPE PART QTY. BIAS
 8021 CO-60 + N* 10 V+=12V, V-=NONINV-INPUT=GND, 1V=INV-INPUT, NC=OUTPUT.

CUM. DOSE (RADS): 0
 *N+10K *N+20K *N+30K
 PARAMETERS MEAN SD MEAN SD MEAN SD
 VDS MV 0.723 0.495 0.910 0.708 1.948 1.418 3.255 2.920
 IDS NA 0.722 0.689 4.687 3.075 14.91 12.09 31.54 32.21
 IB NA 24.49 4.693 91.74

REMARKS: ALL PARAMETERS AVG. OF 4 COMPARATORS. *NEUTRONS: 6.E11 N/SQCM.

 GENERIC PART NUMBER: 139
 FUNCTION: QUAD COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1068 5700
 MANUFACTURER: PART NUMBER: SPECIFICATION: DATA SOURCE: TRW
 AMD AM139

LDC RAD. TYPE PART QTY. BIAS
 7816 CO-60 + N* 10 V+=+12V.

CUM. DOSE (RADS): 0
 *N+100K *N+300K *N+500K
 PARAMETERS MEAN SD MEAN SD MEAN SD
 VDS MV .135 .0775 .225 .150 .5975 .1350 1.255 .1825
 (VREF=1.4V)
 VDS MV .1438 .0708 .1955 .0853 .6395 .1320 1.342 .1868
 (VREF=.11V)
 VDS MV .1383 .0718 .2099 .0852 .6736 .1180 1.352 .1853
 (VREF=0.0V)
 SEE REC 5701.

REMARKS: *NEUTRON RAD. = 6.E11 N/SQCM. **ALL PARAMETERS ARE AVE. OF 4 COMPS.

 GENERIC PART NUMBER: 139

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
140	VOLTAGE REGULATOR	BIPOLAR	1027	5280

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM140LAH-5		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7841	CO-60	20	VIN=10V; VOUT=5V; RL=2400HMS.

PARAMETERS	0			100K			300K			500K		
	MEAN	SD		MEAN	SD		MEAN	SD		MEAN	SD	
VOUT(1)(2) V	4.995	0.029		4.986	0.031		4.989	0.030		4.985	0.031	
VOUT(1)(3) V	4.993	0.028		4.983	0.030		4.985	0.030		4.980	0.032	
VOUT(1)(4) V	4.991	0.029		4.979	0.031		4.980	0.031		4.975	0.032	
VOUT(5)(2) V	5.000	0.028		4.988	0.030		4.992	0.037		4.990	0.031	
VOUT(5)(4) V	4.994	0.028		4.981	0.031		4.983	0.030		4.980	0.031	

REMARKS: 1)VIN=7V. 2)IL=1MA. 3)IL=20MA. 4)IL=40MA. 5)VIN=8V. *CONT ON REC 5281.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
140	VOLTAGE REGULATOR	BIPOLAR	1027	5281

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM140LAH-5		

LDC	RAD. TYPE	PART QTY.	BIAS

PARAMETERS	0			100K			300K			500K		
	MEAN	SD		MEAN	SD		MEAN	SD		MEAN	SD	
VOUT(6)(2) V	5.004	0.028		4.991	0.030		4.997	0.030		4.995	0.030	
VOUT(6)(4) V	4.997	0.028		4.983	0.031		4.987	0.030		4.984	0.031	
VOUT(7)(2) V	5.009	0.028		5.001	0.030		5.010	0.030		5.010	0.029	
VOUT(7)(3) V	5.006	0.028		4.996	0.031		5.005	0.030		5.004	0.030	
VOUT(7)(4) V	5.001	0.029		4.990	0.031		4.998	0.031		4.997	0.031	

REMARKS: CONTINUED FROM RECORD 5280. 6) VIN=10V. 7)VIN=20V.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
14051	8 CHANNEL MUX DEMUX	CMOS	25-31	1570

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	MC14051R		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7719	CO-60	5	UNK.

CUM. DOSE(RADS):		0		12K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
VO	5PASS		5PASS			
IL	5PASS		5PASS			
IIN	5PASS		5PASS			
IDD QUIESCENT	5PASS		5FAIL			
IDD DYNAMIC	5PASS		PASS*			
THL	5PASS		PASS*			
TLH	5PASS		PASS*			

REMARKS: *IDD AND THL DEGRADED SIGNIFICANTLY IN ALL DEVICES UPON IRRADIATION.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
141	2-CH. ANALOG SWITCH	JFET	1026	5290

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICONIX	DG141AL		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7926	CO-60	10	PINS 1,7,11 @+10V; 8,14 VIA 10K TO GND; 9,13,10GND

CUM. DOSE(RADS):		0		25K		50K		75K		100K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IS(OFF)	PA	-45.3	71.49	-176.	33.90	-481.	9.34	-885.	80.79	-1445	22.45	
ID(OFF)	PA	-18.4	25.70	-256.	32.18	-99.1	61.8.	-2314	138.9	-4245	325.9	
ID-IS(ON)	PA	17.71	15.88	34.58	8.289	68.37	5.097	105.0	19.04	144.6	26.29	
IN(LOW)	PA	-96.7	71.65	-337.	28.01	-598.	180.4	-1204	143.2	-1809	328.2	
IN(HI)	MA	-5.03	2.367	-7.14	2.677	-8.49	3.023	-9.46	3.220	-10.2	3.329	
RDS(ON)	OHMS	10.10	5.612	6.966	0.950	8.177	5.536	6.983	0.942	11.02	18.15	

REMARKS: ALL VALUES ARE AVERAGE OF 20 CHANNELS. CONT. ON REC. 5291.

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 GENERIC PART NUMBER 141
 FUNCTION 2-CH. ANALOG SWITCH
 TECHNOLOGY JFET
 REF. NO. RECORD 1026 5291

 MANUFACTURER SILICONIX
 PART NUMBER DG141AL
 SPECIFICATION DATA SOURCE

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0
 25K 50K 75K 100K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 TON NS 327.8 13.27 348.8 14.65 363.3 14.94 373.3 19.06 383.3 24.51
 TOFF NS 852.5 24.26 748.0 24.57 701.0 35.66 681.3 47.75 673.3 55.86

 REMARKS: CONTINUED FROM RECORD 5290.

 GENERIC PART NUMBER 144
 FUNCTION TRIPLE OP AMP
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 25-8 1580

 MANUFACTURER SILICONIX
 PART NUMBER L144BP
 SPECIFICATION DATA SOURCE AEROJET

 LDC RAD. TYPE PART QTY. BIAS
 7440 CO-60 5 V+=5V, V--5V, TYPICAL CIRCUIT

CUM. DOSE (RADS): 0
 12K 50K 160K 350K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 VIO MV 0 0.3 0.0 -0.1 -1.3
 IIO NA 1.2 1.2 1.4 1.8 3.3
 IB NA 32 117 124 117 122
 IQ UA 122 542 103 95
 GBW KHZ 566 490 412 353

 REMARKS: ALL PARAMS. PASSED. GBW DEGRADED: PREIRRAD MAX=534KHZ, POST MAX=291K.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
144	OPERATIONAL AMP	BIPOLAR	21 1840

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	LM144H883B	1980 NSC LINEAR CAT	MAGNAVOX

LDC	RAD. TYPE	PART QTY.	BIAS
CO-60	12	V+=+18VDC; V=-18VDC	

CUM.DOSE(RADS): 0 5K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVOS UA	-28.5	300.						
DIOS PA	-39.2	50.2						
DIB PA	.855	.3188						
DAOL DB	-.983	4.23						
D+VOUT V	.0214	.0298						
D-VOUT V	-.005	.0516						
D+SLEW V/MSEC	-.032	.0681						

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
15	OPERATIONAL AMP	BIPOLAR	401-7 1740

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PRECISION MONOLITHIC	OP-15		INSAT PCC 860

LDC	RAD. TYPE	PART QTY.	BIAS
UNK. CO-60	5	V+=+7.5V, V=-7.5V, TYPICAL NEG FEEDBACK CIRCUIT	

CUM.DOSE(RADS): 0 1MEG

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOS MV	-2.13	.6752						
IB+ PA	512.0	102.1						
IB- PA	490.0	87.46						
IOS PA	38.00	48.17						

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
15	OPERATIONAL AMP	BIPOLAR	401-8 1750

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
PRECISION MONOLITHIC	OP-15		INSAT PCC 860

LDC	RAD. TYPE	PART QTY.	BIAS
UNK	CO-60	5	V+=7.5V, V--7.5V, TYPICAL NEG FEEDBACK CIRCUIT

CUM. DOSE (RADS) :		0		700K		800K		900K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOS	MV	-2.10	.6595	-2.20	.6595	-2.20	.6000	-2.26	.5369	-2.18	.6458
IB-	NA	0.0	0.0	.7800	.8585	.4600	.2702	.0600	1.078	.8000	.9592

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
1524	REG PULSE WIDTH MOD	BIPOLAR	1014 5130

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICON GEN	SG1524		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8180	CO-60	5	VDD=+12V.

CUM. DOSE (RADS):		0		50K		100K		300K		500K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V	REF	5.064	0.021	5.060	0.018	5.060	0.019	5.060	0.019	5.060	0.019
V	SHUT-DOWN	0.828	0.025	0.825	0.026	0.823	0.027	0.821	0.025	0.820	0.026
OSC	F	13.28	0.19	13.32	0.21	13.35	0.21	13.40	0.22	13.44	0.23
OSC	PW	680.0	44.0	687.4	43.7	691.2	44.2	699.0	46.6	703.4	46.5
V	VOH(12)	11.95	0.00	11.94	0.00	11.94	0.00	11.95	0.00	11.94	0.00
V	VOL(12)	0.332	0.017	0.339	0.019	0.340	0.019	0.346	0.019	0.346	0.019
PW	(12)	46.1	0.7	46.0	0.8	45.9	0.8	45.7	0.8	45.4	0.9
REMARKS:											

REMARKS:

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 GENERIC PART NUMBER: 154

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
154	ANALOG SWITCH	JFET	1042	5440
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
SILICONIX	DG154AL		TRW	

LDC	RAD. TYPE	PART QTY.	BIAS													
7623	CO-60	4	VCC=+15V; VEE=-15V; PINS: 13@+2.5V, 5.7@+7V, *													
CUM.DOSE(RADS):			0		100K				300K				500K			
PARAMETERS			MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD		
ID(OFF)	NA	0.005	0.002	0.788	0.656	5.381	4.575	11.45	10.31							
RDS(ON)	OHMS	24.53	1.449	23.04	1.595	23.33	1.484	24.67	1.801							
IS(OFF)	NA	.0005	.0002	0.570	0.484	4.886	3.977	8.086	7.787							

REMARKS: *1,2,3,6,8,14 @ -7V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
154	ANALOG SWITCH	JFET	1043	5450
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
INTERSIL	DG154/A		TRW	

LDC	RAD. TYPE	PART QTY.	BIAS											
7640	CO-60	5	VCC=+15V; VEE=-15V; PINS: 13@+2.5V, 5.7@+7V, *											
CUM.DOSE(RADS):			0		100K		300K		500K					
PARAMETERS			MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ID(OFF)	NA	0.004	0.005	1.170	0.771	5.118	3.605	6.678	4.435					
RDS(ON)	OHMS	21.78	5.136	22.89	4.196	22.91	4.188	22.79	4.375					
IS(OFF)	NA	.0005	.0002	0.283	0.197	1.889	1.664	2.229	1.849					

REMARKS: *1,2,3,6,8,14 @ -7V.

 GENERIC PART NUMBER: 154

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

155 OP AMP BIFET 1052 5540

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NATIONAL LF155 TRW

LDC RAD. TYPE PART QTY. BIAS

7741 CO-60 + N* 10 V+=+15V; V=-15V.

CUM. DOSE (RADS): 0 *N+200K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

VDS(ABS) MV .8732 .5805 13.39 39.41
IDS(ABS) NA .0011 .0009 60.36 94.23
AVOL DB 116.5 2.52 117.3 7.85

REMARKS: *NEUTRON FLUENCE = 6.E11 N/SQCM. NOTE: FAILED PARAMETERS DELETED.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

155 OP AMP BIFET 1053 5550

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NATIONAL LF155

LDC RAD. TYPE PART QTY. BIAS

7817 CO-60 + N* 10 V+=+15V; V=-15V.

CUM. DOSE (RADS): 0 *N+200K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

VDS MV -.111 .8828 .2801 1.785
AVOL DB 116.0 2.236 111.6 2.648

REMARKS: *NEUTRON FLUENCE = 6.E11 N/SQCM. NOTE: FAILED PARAMETERS DELETED.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
156	OP-AMP	BIPOLAR	13	1680

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LF156H		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
*	CO-60	4	V+=20V, V--=20V, RL=2K, VIN=V0, VIN+=3V

CUM. DOSE (RADS): 0 25K 500K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICCL *	391.8	110.4	449.5	94.18	389.0	92.50		
VOL	106.3	14.06	104.1	12.09	103.0	10.51		
VOL	106.8	3.379	105.0	6.218	106.0	7.885		
VIL	2.248	1.595	2.113	1.504	1.993	1.509		
VIL	.0243	.0099	.1438	.1662	.7165	.7778		
IIL	UA	.011	.0037	.0166	.1655	.1853		
IOS	UA	3.825	.7932	3.300	1.214	3.238	1.575	

REMARKS: *7740GB.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
158	OP-AMP	BIPOLAR	501-1	1520

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NS	LM158		MARTIN

LDC	RAD. TYPE	PART QTY.	BIAS
7827	CO-60	6	UNK.

CUM. DOSE (RADS): 0 20K *

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOS	MV	.6267	.4299	.5717	.3489			
IB	NA	19.92	18.64	14.19	17.81			
IOS	NA	1.183	1.165	.6967	.9032			

REMARKS: * INCLUDES LINAC EXPOSURE (LESS THAN 20 RADS)

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
158	LOW PWR DUAL OP AMP	BIPOLAR	1100	5800
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
NATIONAL	LM158		MARTIN-MARIETTA	

LDC	RAD. TYPE	PART QTY.	BIAS
7827	CO-60**	6	V++5V.

CUM. DOSE (RADS):	0	20K	50K	100K
PARAMETERS	MEAN	SD	MEAN	SD
FUNCTIONALITY	6PASS	6PASS	MARG*	6FAIL
VOS	MV .627	.412	.572	.321
IB*	NA 19.92	17.85	14.19	17.05
IOS*	NA 1.18	1.11	.697	.865
			.505	.929
			.167	.553

REMARKS: **AND LINAC. *"DEVICE FAILS BEYOND 50K...IB AND IOS DATA MISLEADING."

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
159	OP AMP	BIPOLAR	1-31	1080
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
RCA CORPORATION	G159R		JPL	

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LDC	RAD. TYPE	PART QTY.	BIAS
8016	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	0	75K	250K	750K	2.5MEG
PARAMETERS	MEAN	SD	MEAN	SD	MEAN
DVOS MV	2.5	8.4	6.042	13.9	781
DIOS NA	1.45	17.5	9.574	10.2	13.00
DIB NA	117.	185.	79.32	290.	108.0
+GAIN DB	101.	100.	1.323	100.	2.861
-GAIN DB	102.	92.	12.71	96.	3.879
					98.9
					870
					FAIL
					FAIL
					FAIL
					FAIL
					FAIL

REMARKS:

GENERIC PART NUMBER: 159

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
159	OP AMP	BIPOLAR	1-32	1090

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	G159R		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS):	O	75K				250K				750K				2.5MEG			
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD				
PARAMETERS																	
DVOS MV	2.44	2.3	3979	1.3	1.245	1.1	1.704	35.	29.72	75.	86.60	1050.	225.8	FAIL			
DIOS NA	87.6	26.	17.86	64.	92.51	700.	186.6	700.	186.6	1050.	225.8	FAIL					
DIB NA	346.	430.	119.7	760.	573.9	700.	186.6	700.	186.6	1050.	225.8	FAIL					
+GAIN DB	26.5	96.	5.890	90.	4.499	88.	1.250	88.	1.250	88.	1.250	88.	1.250	FAIL			
-GAIN DB	102.	96.	1.618	90.	4.499	88.	1.250	88.	1.250	88.	1.250	88.	1.250	FAIL			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1596	BALANCED MOD-DEM0D	BIPOLAR	1034	5360

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	MC1596		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7747L	CO-60	5	PINS: 14@-8V; 1.4@GND; 5 TO GND VIA 6.8K; 8 TO 10*

CUM. DOSE (RADS):	O	100K				300K				500K			
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD				
PARAMETERS													
IB(C)	MA	6.594	1.427	9.624	1.147	13.80	1.107	16.16	1.201				
IOS(C)	MA	-0.36	0.339	-0.36	0.305	-0.21	0.316	-0.22	0.237				
IB(S)	MA	6.88	1.454	9.744	1.351	13.86	1.081	16.42	1.119				
IOS(S)	MA	0.198	0.476	0.244	0.502	0.242	0.529	0.244	0.570				
IOS(O)	MA	-13.0	14.26	-12.9	14.55	-12.5	14.13	-12.7	13.85				

REMARKS: *; +12V VIA 1K TO 12 AND 6, THEN VIA 1K TO GND.

GENERIC PART NUMBER: 1596

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 GENERIC PART NUMBER: 16
 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-40 290

 MANUFACTURER: PRECISION MONOLITHIC
 PART NUMBER: OP16
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 7926 2.5MEV EL 3 UNK.

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		500K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVDS MV	.16	.1562	.198	.2508	.204	.3251	.258	.3249
DIOS NA	.010	.1146	.2	.2690	.55	.4450	.68	.5958
DIB NA	.22	.2844	.9	.5350	1.8	.7784	3.6	1.758
+GAIN DB	104.	102.1	3.497	103.4	3.738	102.6	7.182	102.6
-GAIN DB	99.3	105.2	2.511	106.6	2.255	103.6	3.806	101.7

REMARKS:

 GENERIC PART NUMBER: 161
 FUNCTION: HI-SPEED COMPARATOR
 TECHNOLOGY: TTL
 REF. NO. RECORD: 805-11 550

 MANUFACTURER: NSC
 PART NUMBER: LM161
 SPECIFICATION: TI
 DATA SOURCE: TI

LDC RAD. TYPE PART QTY. BIAS
 8009 CO-60 4 UNK.

CUM. DOSE (RADS): 0

PARAMETERS	12.5K		25K		50K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VDS MV	1.025	.4030	1.050	.4061	1.025	.4113	1.075	.4071
IB+ UA	2.825	.8730	3.175	1.009	3.575	.9826	4.125	1.053
-IOS UA	1.600	.2830	1.550	.3110	1.800	.2830	1.925	.2874

REMARKS:

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 GENERIC PART NUMBER: 161

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
161	VOLT COMPARATOR	BIPOLAR	24-27	1250

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM161	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7846	CO-60	5	V+=15V, V-=15V, VCC=5V

CUM. DOSE (RADS):	0	30K	100K	300K	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS												
D THRES/V+MV		2.480	4.575	-10.7	3.472	-16.7	1.105					
D THRES/V-MV		1.632	5.066	-1.74	6.390	2.414	7.688					
D IIB + UA		2.410	0.854	5.432	1.826	7.256	2.231					
D IIB - UA		1.680	0.865	3.208	1.489	4.388	1.769					

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
161	HI-SPEED COMPARATOR	BIPOLAR	1038	5400

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM1614		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7609	CO-60	5	V+=+12V; V=-12V.

CUM. DOSE (RADS):	0	100K	300K	500K	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS												
VDS MV		0.854	0.579	0.793	0.514	0.807	0.494	0.764	0.492			
VOL V		0.264	0.007	0.268	0.008	0.273	0.008	0.274	0.007			
TPDLH NS		24.00	2.667	25.00	2.261	25.50	3.206	25.00	2.828			

REMARKS:

 GENERIC PART NUMBER: 161

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
1723	VOLT REG	BIPOLAR	41	100

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	MC1723G		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
7619	CO-60	5	UNK.

CUM.DOSE(RADS):		0		13K		52K		170K		360K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ISCO	MA	1.11		1.11		1.06		1.04		1.03	
VR(L1)	%	0.03		0.01		0.03		0.02		0.02	
VR(L2)	%	0.06		0.06		0.07		0.09		0.11	
VR(LOAD4)	%	0.02		0.02		0.02		0.05		0.09	
VR(LOAD5)	%	0.13		0.29		0.41		0.64		0.01	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
1741	OP AMP	BIPOLAR	42	90

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	MC1741CG		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	V+=15V, V--=-15V, RFB=100K, VIN+/- TO GND VIA 10K

CUM.DOSE(RADS):		0		3.1K		2.1K		82K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	MV	1.90		2.00		2.50		2.20		2.30	
IIO	NA	13.80		14.60		13.40		33.50		84.60	
IB	NA	147.0		165.0		204.0		277.0		405.0	
IQ	MA	1.600		1.600		1.600		1.600		1.500	
GBW	KHZ	1881.		2008.		1923.		1778.		1608.	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1802	MICROPROCESSOR	CMOS	1-1	1170

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SANDIA	1802 (LOT B0442A)		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
8046	CO-60	4	VCC=7V FOR 2 DEVICES, VCC=10V FOR 2 DEVICES.

CUM. DOSE (RADS):		0		150K		300K		600K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY	4PASS		4PASS		4PASS		4PASS		4PASS	
@VCC=7V.	4PASS		4PASS		4PASS		4PASS		4PASS	
@VCC=10V.	4PASS		4PASS		4PASS		4PASS		4PASS	
									4FAIL	
									1FAIL	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1802	MICROPROCESSOR	CMOS	4-2	1490

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HUGHES	HMMP1802CD		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
8032	CO-60	2	5V

CUM. DOSE (RADS):		0		5K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
VTN	V	1.780	.0529	1.088	.0621	
VTP	V	1.523	.0887	1.805	.1794	
IDD	UA	0.005	.0071	00.01	00000	
DVTN	V			.6946	.0088	
DVTP37	V			.4374	.0026	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
1802	MICROPROCESSOR	CMDS	4-1	1500
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
HUGHES	HMMP1802CD		MOTOROLA	

LDC	RAD. TYPE	PART QTY.	BIAS
8030	CO-60	2	5V

CUM.DOSE(RADS):					5K					
					MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
VTN	V	1.844	.1495		1.176	.2341				
VTP	V	1.480	.1018		1.785	.1706				
IDD	UA	0.005	.0071		10.65	15.06				
DVTN	V				.6922	.1162				
DVTP37	V				.4179	.0350				

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
1802	MICROPROCESSOR	CMDS	4	1510
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
HUGHES	HMMP1802CD		MOTOROLA	

LDC	RAD. TYPE	PART QTY.	BIAS
7940	CO-60	2	5V

CUM. DOSE (RADS):				0				5K			
PARAMETERS				MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTN	V	1.942	.0574			.5788	.1296				
VTP	V	1.723	.1433			2.050	.1231				
DVTN	V					1.318	.1794				
DVTP37	V					.3246	.0502				
IDD	UA	0.010	.0141			0.130	.1697				

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1802	MICROPROCESSOR	CMOS	801	1550

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HAC	HCMP1802D2	COMMERCIAL	GSFC PPM

LDC	RAD. TYPE	PART QTY.	BIAS
7808D	CO-60	4	+5V, +10V

CUM. DOSE (RADS):		0		4K		6K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN
FUNCTION 5V	4PASS		1FAIL		4FAIL		
FUNCTION 10V	4PASS		4PASS		4FAIL		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1802	MICROPROCESSOR	CMOS	801	1560

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1802D	COMMERCIAL	GSFC PPM

LDC	RAD. TYPE	PART QTY.	BIAS
810	CO-60	6	+5V, +10V

CUM. DOSE (RADS):		0		4K		6K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN
FUNCTION 5V	6PASS		2FAIL		6FAIL		
FUNCTION 10V	6PASS		6PASS		5FAIL		

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1821	1024X1-BIT RAM	CMOS-SOS	94	1640

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1821D		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
SD832	CO-60 *	4	VDD=10V, PINS 1-6,9-16 @ VDD, PIN 7 OPEN, VSS=GND.

CUM. DOSE (RADS):											
		0		16K		20K		25K		30K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY											
@ VDD = 5V	4PASS	3FAIL		4FAIL		4FAIL		4FAIL		4FAIL	
@ VDD = 10V	4PASS	4PASS		4PASS		3FAIL		3FAIL		4FAIL	

REMARKS: ** PARAMETERS CONTINUED ON RECORD 1641. * DOSE RATE = 52 RAD(SI)/S.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1821	1024X1-BIT RAM	CMOS-SOS	94	1641

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1821D		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):											
		0		6K		10K		16K		20K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIL(5)	V	2.425	0.05	1.95	.058	1.675	.096	0.35	0.7	0.00	0.00
VIH(5)	V	2.50	0.00	2.025	0.05	1.775	.096	.375	0.75	0.00	0.00
VIL-CS(5)*	V	2.4		1.8		1.5		+0.R.		+0.R.	
VIL-MWR(5)*	V	2.4		1.7		1.3		+0.R.		+0.R.	
VIL-DI(5)*	V	2.8		2.1		1.8		+0.R.		+0.R.	
VIH-CS(5)*	V	2.3		1.7		1.5		+0.R.		+0.R.	

REMARKS: CONT. FROM REC 1640. (5) MEANS VDD=5V. * MEAN=WORST-CASE (NOT AVG.)

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REF. NO.	RECORD
94	1642

DATA SOURCE -----

9
9
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[illegible]

PARAMETERS CONT. UN. REC. 1043.
REMARKS: CONT. FROM REC. 1641. * MEAN = WORST-CASE VALUE (NOT AVERAGE).

REF. NO.	RECORD
94	1643

DATA SOURCE -----

U.S. DEPARTMENT OF JUSTICE

12K	MEAN	SD
	+0. R.	
	+0. R.	
	+0. R.	

ON REC. 1644.

REMARKS: CONT. FROM REC. 1642. * MEAN = WORST-CASE VALUE (NOT AVERAGE).

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 1821 1024X1-BIT RAM CMOS-SOS 94 1644

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 RCA CDP1821D

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 10K 20K 25K 30K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 IDP(5)* MA -3 +38 +30 +3
 IDN(5)* MA +8 +7 -10 0
 IOZL(5)* UA 0 -3 -5 -13
 IOZH(5)* UA 0 +30 +120 +140
 IDDL(5)* MA +1 +7 +16 +91
 IDDH(5)* MA 0 +2 +11 +18

 --PARAMETERS CONT. ON REC. 1645.
 REMARKS: CONT. FROM REC. 1643. * MEAN = WORST-CASE VALUE (NOT AVERAGE).

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 1821 1024X1-BIT RAM CMOS-SOS 94 1645

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 RCA CDP1821D

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 10K 20K 25K 30K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 VIL(10) V 4.3 0.0 3.58 0.10 2.80 0.08 0.65 1.30 0.0 0.0
 VIH(10) NO DATA.
 VIL-CS(10)* V 4.2 3.2 2.5 3FAIL 4FAIL
 VIL-MWR(10)* V 4.0 2.8 1.6 3FAIL 4FAIL
 VIL-DI(10)* V 5.0 4.1 3.3 3FAIL 4FAIL
 VIH-CS(10)* V 4.1 3.2 2.5 3FAIL 4FAIL

 --PARAMETERS CONT. ON REC. 1646.
 REMARKS: CONT. FROM REC. 1644. (10) MEANS VDD=10V. * MEAN=WORST-CASE(NOT AVG)

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
1821	1024X1-BIT RAM	CMOS-SOS	94 1646
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1821D		

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS):	0	10K	20K	25K	30K
PARAMETERS	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD
VIH-MWR(10)*V	4.0	2.9	2.5	3FAIL	4FAIL
VIH-DI(10)*V	5.0	4.1	3.4	3FAIL	4FAIL
TAA(10)*US	.20	.20	1FAIL	3FAIL	4FAIL
TAC(10)*US	.17	.17	.17	.18	3FAIL
TW(10)*US	.04	.05	.06	.08	3FAIL
TDS(10)*US	.00	.00	.01	.02	4FAIL

ON REC. 1647.
 REMARKS: CONT. FROM REC. 1645. (10) MEANS VDD=10V. * MEAN=WORST-CASE(NOT AVG)

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
1821	1024X1-BIT RAM	CMOS-SOS	94 1647
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1821D		

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS):	0	10K	20K	25K	30K
PARAMETERS	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD
TDH(10)*US	.06	.06	.06	.06	4FAIL
TCS(10)*US	.03	.04	.05	.08	1FAIL
TAS(10)*US	.02	.02	.03	.04	4FAIL
IDP(10)*MA	.16	.16	.12	.05	85
IDN(10)*MA	.16	.16	.12	.07	2
IOZL(10)*UA	.00	.00	.05	.09	-25

ON REC. 1648.
 REMARKS: CONT. FROM RECORD 1646. * MEAN = WORST-CASE VALUE (NOT AVERAGE).

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

1821 1024X1-BIT RAM CMOS-SOS 94 1648

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

RCA CDP1821D

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 10K 20K 25K 30K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
I0ZH(10)* UA 0 50 175 200 290
IDD(10)* MA 2 3 12 18 105
IDDH(10)* MA 0 4 69 105 100

END OF
PARAMETERS

REMARKS: CONT. FROM REC. 1647. (10) MEANS VDD=10V. * MEAN =WORST-CASE VALUE.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

1824 RAM CMOS 4-3 1480

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

HUGHES HMMP1824D MOTOROLA

LDC RAD. TYPE PART QTY. BIAS

8031 CO-60 4 V+=13.5V

CUM. DOSE(RADS): 0 3K 3K * 5K 5K **
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
VTN(AVG.) V 1.963 .0510 1.692 .0786 1.687 .0381 1.526 .0398 1.703 .0088
IDD MA .3147 .5547 .3405 .6054 .4444 .6708 .4933 .7064 .0001
DVTN V .2610 .0359 .4032 .0218 .3213
MAX TRI-STATE
LEAKAGE NA 5 0 5 0 2456 1320
AVG TRI-STATE
LEAKAGE NA 5 0 5 0 2230 1193

REMARKS: *AFTER 7-DAY ANNEAL. **DATA OF 1 DEVICE, IRRAD. AFTER 15-DAY ANNEAL.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1824	32X8 RAM	CMOS	95	1630

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1824D	COMMERCIAL	JPL

LDC	RAD. TYPE	PART QTY.	BIAS
Q10	C0-60	6	VDD=5V AND VDD=10V

CUM. DOSE (RADS):	PARAMETERS	0		1K		3K		6K		10K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
	VIL(5) *	2.27		2.13		1.86		FAIL		FAIL	
	VIL(10) *	4.41		4.35		4.21		FAIL		FAIL	
	VIH(5) *	2.28		2.14		1.87		FAIL		FAIL	
	VIH(10) *	5.52		5.43		5.35		FAIL		FAIL	
	IDD(5) *			.068		25.7		925		967	
	IDD(10) *	3.31		3.24		34.7		9690		6600	

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--PARAMETERS CONT. ON REC. 1631
REMARKS: * MEAN=WORST-CASE VALUE (NOT AVERAGE).

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1824	32X8 RAM		95	1631

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CDP1824D		

LDC	RAD.	TYPE	PART	QTY.	BIAS
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75					

CUM. DOSE (RADS):		0		3K		6K		10K		15K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY											
VDD=10V		6PASS		6PASS		2FAIL		6FAIL		6FAIL	
VDD= 5V		6PASS		6PASS		1FAIL		5FAIL		6FAIL	

REMARKS: CONTINUATION FROM RECORD 1630.

GENERIC PART NUMBER: 1832

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 GENERIC PART NUMBER 1832
 FUNCTION ROM
 TECHNOLOGY CMOS
 REF. NO. RECORD 4-5 1460
 MANUFACTURER HUGHES
 PART NUMBER HMMP1832CD
 SPECIFICATION DATA SOURCE MOTOROLA

LDC RAD. TYPE PART QTY. BIAS
 8036 CO-60 4 V+=5V

CUM. DOSE (RADS): 0 50K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VTN V 1.912 .1339 .5234 .0727
 IDD V 0.118 .1406 .1775 0.205
 DVTN V 0.0 0.0 1.391 .1584

REMARKS:

 GENERIC PART NUMBER 1832
 FUNCTION ROM
 TECHNOLOGY CMOS
 REF. NO. RECORD 4-4 1470
 MANUFACTURER HUGHES
 PART NUMBER HMMP1832CD
 SPECIFICATION DATA SOURCE MOTOROLA

LDC RAD. TYPE PART QTY. BIAS
 8035 CO-60 4 5V

CUM. DOSE (RADS): 0 5K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VTN V 1.799 .0300 .5383 .0468
 IDD UA 0 0 0 0
 DVTN V 0 0 1.261 .0778

REMARKS:

 GENERIC PART NUMBER: 1832

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 GENERIC PART NUMBER: 1832
 FUNCTION: 512X8 ROM
 TECHNOLOGY: CMOS
 REF. NO.: 803
 RECORD: 1530

 MANUFACTURER: RCA
 PART NUMBER: CDPR512D
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: GSFC PPM

 LDC RAD. TYPE: CO-60
 PART QTY.: 5
 BIAS: +5V, +10V

CUM. DOSE (RADS): 0
 3K 10K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS: 3K 10K
 FUNCTION 5V: 3FAIL
 FUNCTION 10V: 5PASS

REMARKS:

 GENERIC PART NUMBER: 1832
 FUNCTION: ROM
 TECHNOLOGY: CMOS
 REF. NO.: 5
 RECORD: 1720

 MANUFACTURER: HUGHES
 PART NUMBER: HMMP1832CD-015
 SPECIFICATION: MOTOROLA
 DATA SOURCE: MOTOROLA

 LDC RAD. TYPE: CO-60
 PART QTY.: 3
 BIAS: V+=5V, PINS: 1-11, 13-17, 20, 21, 23 TO 5V VIA 47K

CUM. DOSE (RADS): 0
 3K 5K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS: 3K 5K
 VTN: V 1.785 .0092 .8403 .0100 .9077 .0100 .2433 .0082
 IDD: UA .0133 .0231 .0133 .0231 .0133 .0231 .0133 .0231
 DVTN: V .9443 .0167 .8766 .0173 1.541 .0144

REMARKS: *PARAMETERS REMEASURED 3 DAYS AFTER FIRST MEASUREMENT AT 3KRADS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1840	16 CHANNEL MUX.	CMOS	24-46	1210

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HI1840	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7841	CO-60	4	V+=15V, V-=-15V, IN(1-8)=AO=A1=VREF=5V, REST GND

CUM. DOSE (RADS): 0 10K 20K 30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D ICC UA	746.7	88.29	3600.	473.5	5000.	657.5		
D ICC(-15V)UA	670.4	67.70	3100.	396.4	4300.	539.2		
D IS/D(P19)NA	0.417	0.787	2.873	3.700	4.140	6.475		
D IS/D(P22)NA	4700.	5500.	119E3	10700	161E3	07600		
D ON/R(P21)OH	8.175	0.330	18.30	1.534	28.07	3.818		
D ON/R(P22)OH	2.975	0.512	5.350	0.465	6.225	2.246		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
1840	ANALOG MULTIPLEXER	CMOS	1003	5020

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HI1-1840-2		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7945	CO-60	10	ALL INPUTS AT 5V, FUNCTIONAL TEST CIRCUIT, VDD=15V

CUM. DOSE (RADS): 0 10K 30K 60K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VAH V	3.811	0.126	3.738	0.119	4.170	0.196	4.977	0.313
RON 1 OHMS	467.1	17.65	432.7	17.14	540.8	19.07	624.8	23.33
RON 16 OHMS	496.1	28.60	526.6	31.00	564.9	28.16	611.3	20.86
IDOFF1 NA	0.018	0.067	0.118	0.071	0.380	0.106	0.793	0.176
IDOFF16 NA	0.002	0.079	0.101	0.095	0.365	0.128	0.770	0.169

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
198	SAMPLE & HOLD	BIPOLAR	22	1850

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NS	LF198A	1980 NSC LINEAR CAT	MAGNAVOX

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	12	V++=+15VDC; V--=-15VDC; PIN7=GND

CUM. DOSE (RADS): 0 5K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DIIN+ PIN3 NA	-	.665	-	.224				
DVDS MV	-	.034	2	.194				
D-ICC MA	0	.059	0	.024				
D+ICC MA	0	.062	0	.021				

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
200	DUAL SPST SWITCH	CMOS	25-10	2040

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HI2-200-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7733M	CO-60	5	UNK.

CUM. DOSE (RADS): 0 2.5K 10K 40K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY	5PASS		5PASS		5PASS		5FAIL	
IS(OFF) **	5PASS		5PASS		5PASS		5PASS	
ID(OFF)	5PASS		5PASS		5PASS		5PASS	
ID(ON)	5PASS		4PASS		5PASS		5PASS	
I+	5PASS		5PASS		3FAIL		5PASS	
I-	5PASS		5PASS		3FAIL		5PASS	
IDD DYNAMIC	5PASS		5PASS		5PASS		5PASS	

REMARKS: **VI, THL, TLH PASS ALL DOSES.

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 GENERIC PART NUMBER: 201
 FUNCTION: ANALOG SWITCH
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 101-1 1950

MANUFACTURER: HARRIS
 PART NUMBER: HI-201
 SPECIFICATION: LITTON
 DATA SOURCE: LITTON

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 5 V+=5V

CUM. DOSE(RADS): 0

PARAMETERS	4K		8K		MEAN	SD	MEAN	SD
	MEAN	SD	MEAN	SD				
LEAK/IN+10 PA	15.00	19.00	38.00	39.00	23.00	24.00		
LEAK/O +10 PA	18.00	20.00	34.00	35.00	16.00	15.00		
LEAK/IN-10 PA	147.0	113.0	127.0	109.0	23.00	19.00		
LEAK/O -10 PA	116.0	92.00	141.0	119.0	17.00	14.00		

REMARKS:

 GENERIC PART NUMBER: 201
 FUNCTION: QUAD SPST SWITCH
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 25-11 2030

MANUFACTURER: HARRIS
 PART NUMBER: HI1-201-2
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7730V CO-60 5 UNK.

CUM. DOSE(RADS): 0

PARAMETERS	2.5K		10K		40K		130K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY	5PASS		5PASS		4FAIL		4FAIL	
IDD(DYNAMIC)*	5PASS		5PASS		5PASS		5PASS	
IS(OFF)	5PASS		5FAIL		5PASS		5PASS	
ID(OFF)	5PASS		5PASS		5FAIL		5PASS	
ID(ON)	5PASS		5PASS		5FAIL		5PASS	
I+	5PASS		5PASS		4PASS		4PASS	
I-	5PASS		5PASS		4PASS		4PASS	

REMARKS: *VI, TLH, TLH PASS ALL DOSES **1 FAILED, 4 IMPROVED (OF 4, SOME PASSED).

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GENERIC PART NUMBER: 2102
 FUNCTION: RAM
 TECHNOLOGY: NMOS
 REF. NO. RECORD: 701-4 2010

MANUFACTURER: NATIONAL
 PART NUMBER: MM2102-2MD
 SPECIFICATION: AFWL-TR-79-118

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 10 V+=5V, 5 DEVICES HAD ALL INPUTS TO GND. 5 AT V+

CUM. DOSE (RADS): 0 5K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC1	MA	27.00			26.80			
IOL	MA	1.380			1.380			
IOH	MA	1.360			1.430			
TAC	NS	354.0			350.0			

REMARKS:

GENERIC PART NUMBER: 215
 FUNCTION: PHASE-LOCKED LOOP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-147 1880

MANUFACTURER: EXAR INTEGRATED SYST
 PART NUMBER: XR215
 SPECIFICATION: JPL

LDC RAD. TYPE PART QTY. BIAS
 7816 2.5MEV EL 3 VCC=5V, VEE=-5V.

CUM. DOSE (RADS): 0 30K 75K 150K 600K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX) * MA	12.16		12.35		12.22		12.11		11.80	
IEE(MAX) * MA	12.35		12.63		12.45		12.27		11.88	
CAPTURE RANGE										
LOW*(MIN)KHZ	383		384		384		385		382	
CAPTURE RANGE										
HIGH*(MAX)KHZ	415		413		412		412		411	
---PARAMETERS	CONT.		ON		REC.		1881.			

REMARKS: * MEAN = WORST-CASE VALUE (NOT AVERAGE).

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
215	PHASE-LOCKED LOOP	BIPOLAR	1-147	1881

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
EXAR INTEGRATED SYST	XR215		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LOCK-IN RANGE								
LOW*(MIN)KHZ	353		354		355		355	
LOCK-IN RANGE								
HIGH*(MAX)KHZ	455		449		446		444	
FREE RUN FREQ								
*(MEAN) MHZ	4.84		4.80		4.80		4.79	
---PARAMETERS CONT. ON REC. 1882.								
REMARKS: CONTINUED FROM RECORD 1880. * MEAN=WORST-CASE (NOT AVG.).								

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
215	PHASE-LOCKED LOOP	BIPOLAR	1-147	1882

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
EXAR INTEGRATED SYST	XR215		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
X-JITTER								
(MAX) NS	183		178		184		159	
Q2-JITTER								
(MAX) NS	310		290		250		267	
IN-OUT JITTER								
(MAX) NS	476		522		534		645	

REMARKS: CONTINUED FROM RECORD 1881. END OF PARAMETERS.

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 GENERIC PART NUMBER: 2420
 FUNCTION: SAMPLE AND HOLD
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-33 1960

 MANUFACTURER: HARRIS
 PART NUMBER: HA2420
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 7806 CO-60 3 UNK.

CUM. DOSE (RADS): 0
 50K 75K 150K 300K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 DVOS MV .24 .1925 .25 .2853 .43 .3793 .75 .4680
 DIOS NA 1.04 .3236 .96 .1436 1.38 .5559 1.78 1.004
 DIB NA 31.3 .959 40.2 .777 65.3 .209 91.7 .740
 +GAIN DB 77.2 70.9 1.113 68.1 1.789 64.6 1.209
 -GAIN DB 76.5 71.2 1.542 69.9 2.823 64.5 1.480 61.8 1.789

REMARKS:

 GENERIC PART NUMBER: 24250
 FUNCTION: OP-AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 24-4 1980

 MANUFACTURER: NATIONAL
 PART NUMBER: LH24250
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: ROCKWELL

LDC RAD. TYPE PART QTY. BIAS
 8027 CO-60 5 V+=15V, V-=-15V, NONINV-INPUT=5V, INV-INPUT=OUTPUT

CUM. DOSE (RADS): 0
 10K 30K 50K
 MEAN SD MEAN SD MEAN SD
 PARAMETERS
 D VOS MV 2.112 2.351 3.114 2.318 4.822 .731
 D IOS NA -3.79 0.709 -.613 1.342 8.381 3.045
 D IIB NA 28.05 4.052 333.0 80.49 97.00 16.29

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
24250	OP-AMP	BIPOLAR	24-3	1990

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LH24250	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7902	CO-60	5	V+=15V, V-=-15V, NONINV-INPUT=5V, INV-INPUT=OUTPUT

CUM.DOSE(RADS):		0		10K		30K		50K		100K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV		0.855	0.516	2.060	0.806	5.505	1.110	5.833	2.800		
D IOS	NA		2.084	1.056	4.719	.200	8.429	6.334	31.09	30.03		
D IIB	NA		31.30	3.818	79.55	10.25	139.0	18.53	186.1	42.67		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
244	256X4 RAM	CMOS	1-143	1900

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SANDIA	TCC244		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
*	1.25MEVGAM	12	VDD=10V.

CUM.DOSE(RADS):		0		30K		75K		150K		300K***		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ISS(MAX)**	NA	100		100		1500		18000		54000		
IDN(MAX)**	MA	5.8		5.8		5.5		5.4		4.8		
IDP(MAX)**	MA	3.2		3.2		3.0		2.9		2.6		
VDD(MIN)**	V	3.8		3.8		4.9		8.4		10.1		
TAA(MAX)**	NS	150		160		175		210		260		
TAC(MAX)**	NS	105		110		120		140		185		

--PARAMETERS MEAS. @VDD= 10V.
 REMARKS: *8024.8051,8106. ** MEAN=WORST-CASE (NOT AVG.). ***CONT. ON REC.1901

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
244	256X4 RAM	CMOS	1-143 1901

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SANDIA	TCC244		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0 600K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ISS(MAX)** NA	100		90000					
IDN(MAX)** MA	5.8		4.2					
IDP(MAX)** MA	3.2		2.2					
VDD(MIN)** V	3.8		11.8					
TAA(MAX)** NS	150		370					
TAC(MAX)** NS	105		270					

REMARKS: CONTINUATION OF DOSES FROM RECORD 1900.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
245	TRIPLE LINE XMTR	BIPOLAR	25-13 2080

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HD245-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7623	CG-60	5	UNK

CUM. DOSE (RADS): 0 2.5K 10K 40K 130K *

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IOUT-ON	5PASS		5PASS		5PASS		5PASS		5PASS	
IOUT-OFF	5PASS		5PASS		5PASS		5PASS		5PASS	
ICER	5PASS		5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS		5PASS	
ICC	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *ALL PARAMETERS PASSED AT A FINAL CUMULATIVE DOSE OF 250K RADS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
248	TRIPLE LINE RCVR	BIPOLAR	25-14	2090

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HD248-2		AEROJET

LDC RAD. TYPE PART QTY. BIAS

* (3) CO-60 5 UNK.

CUM. DOSE (RADS): 0 2.5K 10K 40K 130K **

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH	5PASS		5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS		5PASS	
VOS	5PASS		5PASS		5PASS		5PASS		5PASS	
ICC	5PASS		5PASS		5PASS		5PASS		5PASS	
IEE	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *7408, EH088, 7328. **ALL PASSED AT FINAL CUM DOSE OF 250KRAD.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
25LS22	8-BIT SHIFT REGISTR	BIPOLAR	1054	5560

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MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM25LS22		TRW

LDC RAD. TYPE PART QTY. BIAS

8024D CO-60 + N* 10 VCC=+5V.

CUM. DOSE (RADS): 0 *N+200K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL(DY7)	MV	345.4	14.53	343.9	15.26			
VOL(DY5)	MV	341.0	14.70	341.2	15.79			
VOL(DY3)	MV	340.3	14.91	336.4	15.43			
VOL(DY1)	MV	331.0	14.79	331.0	15.77			
VOL(DY6)	MV	340.1	32.31	346.7	15.59			
VOL(DY4)	MV	340.7	15.23	342.5	15.59			

CONT. REC. 5561

REMARKS: DYO, 1, 2, 3, 4, 5, 6, 7 = PINS 13, 7, 14, 6, 15, 5, 16, 4, RESPECTIVELY. QO=PIN 12.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
25LS22	8-BIT SHIFT REGISTR	BIPOLAR	1054	5561

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM25LS22		

LDC	RAD. TYPE	PART QTY.	BIAS
	CO-60 + N*		

CUM. DOSE (RADS):	O	*N+200K		*N+300K		*N+500K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
VOL(DY2)	MV	337.7	15.20	337.9	16.53		
VOL(DYO)	MV	335.5	13.73	342.4	13.67		
VOL(OO)	MV	354.2	14.76	354.4	16.35		

REMARKS: CONTINUATION OF RECORD 5560. *NEUTRON RAD. = 6.6E11 N/SOCCM.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
25LS22	8-BIT SER/PAR REGIS	TTL	1073	5750

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM25LS22		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7744	CO-60 + N*	5	VCC=+5V.

CUM. DOSE (RADS):	O	*N+100K		*N+300K		*N+500K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
II	NA	121.8	11.48	112.2	12.93	101.6	11.19
IIL	NA	.7960	.0114	.7940	.0089	.7760	.0089
IIH	NA	97.0	13.69	85.8	8.701	86.2	9.365

REMARKS: *NEUTRON RAD. = 6.6E11 N/SOCCM. **CONTINUED ON RECORD 5751.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
25LS22	8-BIT SER/PAR REGIS	TTL	1073	5751

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM25LS22		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	N+100K		N+300K		N+500K	
	MEAN	SD	MEAN	SD	MEAN	SD
VOL *	302.0	5.165	304.6	11.60	301.2	7.461
IOL *	5.826	.4159	6.042	.5823	6.054	.5861
IOZL **	3.018	.4838	6.304	.8904	9.338	.8733
IOZH **	330	335.0	326.0	341.0	495.6	375.4
VOH *	2.943	.0074	2.948	.0081	2.949	.0085
					2.951	.0110

REMARKS: ***CONTINUATION OF RECORD 5750. *AVE. OVER 9 PINS. **AVE. OVER 8 PINS

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2510	OP AMP	BIPOLAR	43	1910

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2510-2		IRT CORP.

LDC	RAD. TYPE	PART QTY.	BIAS
7416G	CO-60	5	V+=+5V, V=-5V

CUM. DOSE (RADS): 0

PARAMETERS	13K		52K		170K		360K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	0.800		0.800		1.0		1.0	
IIO	2.40		5.3		9.9		16.1	
IB	186.0		217.0		263.0		334.0	
IQ	4.40		4.60		4.60		4.50	
GBW	1753.		1753.		1751.		1687.	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2520	OP AMP	BIPOLAR	44	1920

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2520-2		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	8	V+=+5V, V-= -5V

CUM. DOSE (RADS) :		0		10K		30K		100K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV			- .131	0.170	-.256	0.360	0.499	0.923	-1.33	2.55
D IOS	NA			-.870	1.360	-2.63	3.10	-4.13	6.90	-9.01	16.30
D IB	UA			0.022	3.62	0.064	8.19	0.150	0.013	0.298	0.022
D AV	DB			-.163	.3020	-.750	0.316	-1.74	0.570	-3.01	0.976

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2520	OP-AMP	BIPOLAR	24-1	2000

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2520	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
2014	CO-60	8	V+=15V. V--=15V. NONINV-INPUT=5V. INV-INPUT=OUTPUT

CUM. DOSE (RADS) :		0		30K		100K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
	V								
D VOS	M			- .997	.446				
D IOS	NA			08.70	15.57	+1.43	1.47	-11.8	23.3
D ITR	NA			117.6	48.29	0.622	15.60	-44.7	66.51
D ITR	NA			281.4	115.7	281.4	115.7	723.5	374.9

REMARKS:

GENERIC PART NUMBER: 2520

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2520	OP AMP	BIPOLAR	25-15	2060

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2-2520-2		AEROJET

-----	RAD. TYPE	PART QTY.	BIAS	-----
LDLC				
7706E	CO-60	4	UNK.	

CUM. DOSE (RADS) :	0		18.6K		102.3K		418.5K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS								
VIO	4PASS		4PASS		1FAIL		1F *	
IB	4PASS		4PASS		3FAIL		4F **	
IIIO	4PASS		4PASS		1FAIL		2F***	
IQ	4PASS		4PASS		5PASS		5PASS	
GBW	4PASS		4PASS		5PASS		5PASS	

REMARKS: *MAX EXCEEDANCE=22MV. **MEAN=471NA(SPECMAX±200NA). ***MAX EXCDNC=251NA

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2520	OP AMP	BIPOLAR	1002	5010

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA9-2520		TRW

LDC	RAD.	TYPE	PART	QTY.	BIAS
7750	C0-60	5	V+=15V. V=-15V. VIN=1V(PP) 1KHZ. RTN=10K. RF=100K		

PARAMETERS		0		300K		500K		700K		1MEG	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
1HZ	DB	83.24	0.38	70.91	0.47	70.45	0.58	70.62	0.57	70.85	0.63
1KHZ	DB	0.420	4.472	0.444	4.506	0.421	4.446	0.256	4.421	0.008	4.444
1KHZ	OS	0.600	1.283	17.64	11.32	19.50	23.17	23.40	27.50	18.01	30.78
1KHZ	IB	17.47	1.79	219.2	19.58	271.6	17.29	278.6	13.10	289.1	17.64
1KHZ	AVOL	82.76	0.25	71.64	0.56	70.91	0.64	71.17	0.65	71.38	0.69
5KHZ	DB	69.29	0.10	67.13	0.23	66.84	0.26	66.93	0.27	66.99	0.27

REMARKS:

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MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM26LS31		TI

CUM. DOSE (RADS):		0		12.5K		50K		100K		200K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V	V0H	4.019	.0403	4.025	.0599	4.040	.0677	4.075	.0908	4.100	.0570
V	V0L	.1	0.0	.1	0.0	.1	0.0	.1	0.0	.1	0.0

REMARKS:

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MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2600		IRT CORP

		CUM. DOSE(RADS) :					
		0			100K		
	PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
	VOS	- .283	.3510	.0100	1.111		
	IB(+NV)	- .588	1.105	60.67	26.86		
	IB(-INV)	1.003	.5989	5.150	.5809		
	IOS	1.590	1.175	-48.8	105.7		
	CMRR	60.00	0.0	59.93	2.444		
	GAIN	113.8	0.500	85.67	15.01		

REMARKS:

GENERIC PART NUMBER: 2600

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2620	OP AMP	BIPOLAR	1025	5270

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2620	TRW	

LDC	RAD. TYPE	PART QTY.	BIAS
7816	CO-60	5	V+=15V, V--15V, NONINV-INPUT TO GND VIA 6.8K, **

CUM. DOSE (RADS): 0

PARAMETERS	10K		25K		50K		100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL	107.0	2.229	108.7	1.925	107.6	1.987	106.8	1.674
IB	-1.56	0.835	-1.39	0.808	-1.30	0.623	-1.76	0.573
VDS	0.276	1.190	0.275	1.165	0.283	1.161	0.293	1.158
IOS	0.050	2.413	-0.34	2.491	-0.71	3.116	-1.03	3.411
SLEW	33.10	1.597	32.80	2.588	32.20	1.483	31.80	1.789
	27.80	1.789	28.20	1.096	28.20	1.096	27.20	1.304

REMARKS: * NO DATA TAKEN. ** RIN=RL=10K, RF=20K, NO SIGNAL INPUT.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
27LS08	32X8 PROM	LSTTL	25-16	2050

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM27LS08DM	AEROJET	

LDC	RAD. TYPE	PART QTY.	BIAS
7703	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	65K		185K		525K	
	MEAN	SD	MEAN	SD	MEAN	SD
VIK	5PASS	5PASS	5PASS	5PASS	5PASS	5PASS
VOL	5PASS	5PASS	5PASS	5PASS	5PASS	5PASS
II	5PASS	**	1FAIL	1FAIL	1FAIL	1FAIL
IIH	5PASS	*FAIL	2FAIL	2FAIL	2FAIL	2FAIL
IIL	5PASS	5PASS	5PASS	5PASS	5PASS	5PASS
ICEX	5PASS	5PASS	5PASS	5PASS	5PASS	5PASS
ICC	5PASS	5PASS	5PASS	5PASS	5PASS	5PASS

REMARKS: **S/N 50 FAILED (PREVIOUS NEUTRONS: 5. E10N/50CM). *S/N 50854(PREV.FXR)

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 GENERIC PART NUMBER: 2700
 FUNCTION: 10 VOLT REFERENCE
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 195 1890

 MANUFACTURER: HYBRID SYSTEMS
 PART NUMBER: AD2700
 SPECIFICATION: WESTINGHOUSE
 DATA SOURCE: WESTINGHOUSE

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 4 VIN=+18VDC

CUM. DOSE(RADS): 0 400K 800K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V0 VIN=15 V	9.997	.0010	9.998	.0008	9.998	.0005		
IN VIN=15 MA	9.075	.0500	9.050	.0577	9.050	.0577		
V0 VIN=13 V	9.997	.0010	9.998	.0008	9.998	.0005		
V0 VIN=18 V	9.997	.0010	9.998	.0008	9.998	.0005		
V0 IL=0 V	9.997	.0010	9.998	.0007	9.998	.0005		
V0 IL=10 V	9.997	.0010	9.998	.0007	9.998	.0005		

REMARKS: PARTS WERE UNBIASED UP TO 400K AND BIASED FROM 400K TO 800K

 GENERIC PART NUMBER: 2700
 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 46 1940

 MANUFACTURER: HARRIS
 PART NUMBER: HA2700-2
 SPECIFICATION: IRT CORP
 DATA SOURCE: IRT CORP

LDC RAD. TYPE PART QTY. BIAS
 CO-60 5 V+=+15V, V=-15V

CUM. DOSE(RADS): 0 13K 52K 170K 360K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V10 MV	1.000		1.000		1.200		1.800		3.000	
I10 NA	0.900		0.800		1.300		2.900		5.70	
IB NA	6.500		7.100		8.600		13.60		16.10	
IQ UA	90.00		88.00		79.00		60.00		42.00	
GBW KHZ	3153.		3012.		2616.		1896.		1235.	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2700	OP-AMP LOW PWR	BIPOLAR	99	2070

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA2700	COMMERCIAL	JPL

LDC	RAD. TYPE	PART QTY.	BIAS
794-1	2.5MEV EL.	4	V+=+12V, V=-12V

CUM. DOSE (RADS):		0		1K		5K		10K		40K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV			-.022	.032	-.202	.062	-.337	.104		
D IOS	NA			-.079	.092	-.128	.396	-.356	.491		
D IB	NA			.116	.168	.879	1.879	1.516	3.538	FAIL	FAIL
GAIN(+3V)		119.3	2.307	117.5	1.812	111.3	.476	109.8	.638		
GAIN(-3V)		116.2	0.726	115.2	0.642	110.1	1.133	107.7	1.154		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2901	4-BIT MICROPROCESSR.	TTL	1074	5760

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AND	AM2901		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-50 + N*	5	UNK.

CUM. DOSE (RADS) :	0		*N+500K	
	MEAN	SD	MEAN	SD
PARAMETERS				
V0H(13) *	2.979	.0170	2.970	.0243
V0L(14) *	.3069	.0108	.3019	.0123
-ISC(13) *	60.71	6.969	62.62	9.421
-IIL(28) *	304.1	10.98	308.7	14.83

REMARKS: *NEUTRON RAD. = 6.E11 N/SQCM. *(X)=AVERAGE OVER X PINS.

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 2909 4-BIT UPORG SEQNCER BIPOLAR 1055 5570

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 AMD AM2909 TRW

 LDC RAD. TYPE PART QTY. BIAS

 7811D CO-60 + N* 10 VCC(PIN 28)=+5V.

 CUM. DOSE (RADS): *N+200K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

 VOL1(CNP4) MV 304.2 5.594 304.5 5.503
 VOL1(V3) MV 273.3 6.773 275.1 6.887
 VOL1(V2) MV 273.0 7.379 274.8 7.554
 VOL1(V1) MV 268.7 7.424 270.4 7.291
 VOL1(V0) MV 269.3 7.987 271.4 7.806
 IIL(PUP) UA -447 78.60 -453 42.38
 IIL(OE) UA -485 27.13 -479 27.43
 REMARKS: *NEUTRON RAD. = 6.25E11 N/SQCM.

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 2909 4-BIT MICRPRG SEQR TTL 1075 5770

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 AMD AM2909DM TRW

 LDC RAD. TYPE PART QTY. BIAS

 *** CO-60 + N* 5 VCC=+5V.

 CUM. DOSE (RADS): 0 *N+100K *N+300K *N+500K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

 VIH(5) V 1.592 .0150 1.591 .0167 1.589 .0162 1.584 .0164
 VIL(5) MV 788.8 29.40 757.6 62.20 784.0 54.80 775.6 62.55
 VOH(5) V 2.912 .0243 2.906 .0248 2.903 .0249 2.904 .0250
 VOL(5) MV 259.8 16.54 261.5 16.57 263.0 16.59 262.8 16.56
 @IOL=4MA

 CONTINUED ... ON REC. 5771
 REMARKS: *NEUTRON RAD. = 6.E11 N/SQCM. ***7816DP. **(X)=AVERAGE OVER X PINS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2909	4-BIT MICRPROG SEQR	TTL	1075	5771

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM2909DM		

LDC	RAD. TYPE	PART QTY.	BIAS

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CUM. DOSE (RADS): 0

PARAMETERS	N+100K		N+300K		N+500K	
	MEAN	SD	MEAN	SD	MEAN	SD
VOL(5) MV	305.6	19.26	307.0	19.27	309.0	19.31
① IOL=8MA						
VOL(5) MV	346.0	22.03	347.9	22.09	349.6	22.11
① IOL=12MA						
-10S(5) MA	62.65	2.032	62.51	2.033	62.36	2.034
10ZH(4) NA	1.675	.3945	1.180	.6325	1.203	.5378
-10ZL(4) NA	.1455	.2980	.0755	.5221	-.081	.4338
REMARKS:	CONTINUATION OF REC. 5770. CONTINUED ON RECORD 5772.					

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
2909	4-BIT MICRPROG SEQR	TTL	1075	5772

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	AM2909DM		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	N+100K		N+300K		N+500K	
	MEAN	SD	MEAN	SD	MEAN	SD
IIL(21) UA	310.7	11.20	307.3	11.54	306.8	11.58
IIL(21) PA	514	265.0	474	478.5	522	379.6
IIL(21) NA	1.245	.3776	.9545	.5802	1.072	.4694
ICC(1) MA	99.60	4.722	96.82	4.789	96.60	4.775
① PIN 28						
(VCC=5.5V)						

REMARKS: CONTINUATION OF RECORD 5771.

 GENERIC PART NUMBER 300
 FUNCTION DUAL SPST SWITCH
 TECHNOLOGY CMOS
 REF. NO. RECORD 25-17 2160
 MANUFACTURER SILICONIX
 PART NUMBER DG300AA
 SPECIFICATION AEROJET
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS
 7724 CO-60 5 UNK.

CUM. DOSE (RADS): 0 19K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VIN * SPASS
 IS(OFF) UA SPASS
 ID(OFF) UA SPASS
 ID(ON) MA SPASS
 I1 ** MA SPASS
 I2 *** MA SPASS
 INH MA SPASS
 REMARKS: * INL PASSED. ** SPECIMIN = .01MA. *** SPECIMIN = .5MA. **** - 56<I(OFF)<1.5UA.

 GENERIC PART NUMBER 303
 FUNCTION DUAL SPST SWITCH
 TECHNOLOGY CMOS
 REF. NO. RECORD 25-18 2170
 MANUFACTURER SILICONIX
 PART NUMBER DG303AP
 SPECIFICATION AEROJET
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS
 7840 CO-60 5 +15V, -15V, WORST-CASE CIRCUIT

CUM. DOSE (RADS): 0 13.5K 59K 113K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 FUNCTIONALITY *
 VIN ** SPASS
 IS(OFF) SPASS
 ID(OFF) SPASS
 ID(ON) SPASS
 INH SPASS
 INL SPASS
 REMARKS: ** I1, I2 PASS ALL DOSES. * SWITCHING MORE ERRATIC PER EACH RAD INCREM

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
307	DUAL SPDT SWITCH	CMOS	25-19	2180

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SILICON X	DG307AP		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7834	C0-60	5	UNK.

CUM. DOSE (RADS):	0		14K					
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS								
VIN*	5PASS		5PASS					
IS(OFF) ** MA	5PASS		5FAIL					
ID(OFF) ** MA	5PASS		5FAIL					
ID(ON) ** MA	5PASS		5FAIL					
I1 *** MA	5PASS		3.1	5FAIL				
I2 *** MA	5PASS		3.1	5FAIL				
INH	5PASS		5PASS					

REMARKS: *INL ALSO PASSED. ***SPEC. MAX=20UA. ***SPEC. MAX: I1=10UA; I2=-10UA.

INH 3PASS 3PASS
REMARKS: *TNI ALSO PASSED.
***SPEC.MAX=2UA. ***SPEC.MAX: I1=10UA: I2=-10UA.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
336	RF PHASE DETECTOR	BIPOLAR	1-126	2140

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	MIC336		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5MEV EL	4	UNK.

CUM. DOSE (RADS) :		0		30K		75K		150K		600K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DET BAL V 1A		.799		.78	.0133	.76	.0120	.75	.0128	.72	.0123
DET BAL V 1B		.933		.92	.0363	.91	.0162	.90	.0152	.86	.0111

[illegible]

GENERIC PART NUMBER: 336
 FUNCTION: RF PHASE DETECTOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-127 2150

MANUFACTURER: MOTOROLA
 PART NUMBER: MIC336
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 4 UNK.

CUM. DOSE (RADS): 0 30K 75K 150K 600K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 DET BAL V 1A .744 .74 .0317 .72 .0350 .71 .0312 .69 .0272
 DET BAL V 1B .782 .78 .0248 .76 .0217 .77 .0243 .74 .0207

REMARKS:

GENERIC PART NUMBER: 339
 FUNCTION: QUAD COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 100 2200

MANUFACTURER: FAIRCHILD
 PART NUMBER: UA339PC
 SPECIFICATION: WESTINGHOUSE
 DATA SOURCE: WESTINGHOUSE

LDC RAD. TYPE PART QTY. BIAS
 7918 CO-60 5 V+=+5V

CUM. DOSE (RADS): 0 400K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIOS MV .2095 .2138 00000 2.042
 IIB NA -.340 .0165 -.105 .7165
 IOS NA .0305 .4811 -.446 1.633

REMARKS:

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 GENERIC PART NUMBER: 339

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
339	QUAD COMPARATORS	BIPOLAR	100	2220

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AMD	LM339N		WESTINGHOUSE

LDC	RAD. TYPE	PART QTY.	BIAS
7842D	CO-60	5	V+=5V

CUM. DOSE (RADS): 0 400K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIOS	MV	-.147	.3201	.1240	1.678			
IIB	NA	-.349	.0137	-.350	0.0000			
IOS	NA	.0245	.0932	0.275	1.819			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
339	QUAD COMPARATORS	BIPOLAR	100	2230

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	LM339N		WESTINGHOUSE

LDC	RAD. TYPE	PART QTY.	BIAS
7924	CO-60	5	V+=5V

CUM. DOSE (RADS): 0 400K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIOS	MV	-.042	.1688	.4360	1.381			
IIB	NA	-.306	.0506	.4238	2.365			
IOS	NA	-.003	.0747	-.219	1.857			

REMARKS:

 GENERIC PART NUMBER: 339

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
339	QUAD COMPARATOR	BIPOLAR	100	2240

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	LM339N		WESTINGHOUSE

LDC	RAD. TYPE	PART QTY.	BIAS
7926	CO-60	5	V+=5V

CUM. DOSE (RADS): 0 400K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V10S	MV	.1330	.0578	.6690	1.556			
I1B	NA	-.247	.0420	-.350	0.0000			
I0S	NA	.0530	.1355	.7100	1.472			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
3523	OVER VOLT SEN CKT	BIPOLAR	194	2490

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SG	SG3523V		WESTINGHOUSE

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	4	UNK.

CUM. DOSE (RADS): 0 400K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC 35V	MA	5.800	.5888	5.075	.2986			
VTH VIN=5V	V	2.663	.0639	2.568	.0219			
VOUT (OFF)	V	.5000	.0416	.2800	.0346			
ISOURCE	UA	143.3	94.27	167.3	7.182			
ICE	NA	.1100	.0294	.4200	.0632			
VOUT (ON)	V	3.348	.0150	3.403	.0050			
VSAT	V	.1840	.0122	.2360	.0145			

REMARKS:

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 GENERIC PART NUMBER: 371
 FUNCTION: 12-BIT D/A CONVRTR.
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 1-133 2120

 MANUFACTURER: MNC
 PART NUMBER: MN371
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 ** 2.2MEV EL 2 VCC=15V, VEE=-15V.

CUM. DOSE (RADS): 0 30K 75K 150K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
NONLIN * LSB	.1940		.4760		.8160		2.170		5.250	
ABS ERR MV	4.970		16.57		36.40		69.80		112.2	
+SR(MIN) MV/S	639.0		610.0		567.0		513.0		452.0	
-SR(MIN) MV/S	686.0		668.0		643.0		627.0		595.0	
IIL(MAX) PA	700.0		534.0		530.0		557.0		592.0	
IIL(MAX) UA	125.9		126.1		126.0		126.2		126.2	
--PARAMETERS	CONT.		ON REC.	2121						

REMARKS: **7709,7711. * MEAN=WORST-CASE VALUE (NOT AVG.) @VCC=15V, VEE=-15V.

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 GENERIC PART NUMBER: 371
 FUNCTION: 12-BIT D/A CONVRTR.
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 1-133 2121

 MANUFACTURER: MNC
 PART NUMBER: MN371
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 30K 75K 150K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ABS ACC (MAX) % FSR	.0497		.1658		0.364		0.696		1.122	
ICC-L(MAX) MA	2.30		2.29		2.28		2.27		2.26	
ICC-H(MAX) MA	1.920		1.914		1.904		1.895		1.885	
IEE-L(MAX) MA	2.09		2.07		2.06		2.06		2.04	
IEE-H(MAX) MA	2.12		2.11		2.11		2.10		2.09	

REMARKS: CONTINUATION FROM RECORD 2120. *END OF PARAMETERS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4N24	OPTICAL ISOLATOR	BIPOLAR	1028	5300

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TEXAS INSTRUMENTS	4N24		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7744A	CO-60	10	PINS: 3e25V; 5.1 VIA 10K TO GND; 7e1.0V; 2eGND.

PARAMETERS	0		100K		300K		500K		750K		
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
IR	16.39	13.73	17.92	13.69	17.65	14.07	16.97	13.43	16.84	14.08	
IC(3FF)	NA	7.340	4.987	167.3	157.9	2.260	1.194	190.0	212.4	186.3	211.9
IC(QN)	MA	18.55	4.065	15.13	3.178	11.83	2.319	10.59	2.025	9.890	1.981
VF	MV	1168.	3.743	1170.	3.479	1171.	3.542	1170.	3.598	1169.	3.521
VCE(SAT)	MV	153.2	20.37	152.9	15.94	168.2	17.35	176.8	18.88	185.2	19.69
HFE		1381.	368.5	1094.	284.5	854.5	235.3	797.9	222.1	759.7	199.1

REMARKS: CONTINUED ON RECORD 5301.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4N24	OPTICAL ISOLATOR	BIPOLAR	1028	5301

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	4N24		

LDC	RAD. TYPE	PART QTY.	BIAS
7744A	CO-60	10	

PARAMETERS	0		100K		300K		500K		750K		
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
TR	US	4.06	.7338	3.85	.6546	3.42	.5075	4.51	1.418	6.76	2.988
TF	US	4.03	1.041	3.56	.8102	2.78	.7208	2.67	.6357	2.77	.6165

REMARKS: CONTINUED FROM RECORD 5300.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4001	QUAD 2-INPUT NOR	CMOS	48	2390

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4001B		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	4	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	0		5K		10K	
	MEAN	SD	MEAN	SD	MEAN	SD
ICC	UA	.0100	.0100		105.0	
VIIH	V	5.65	5.23		4.62	
VIL	V	4.88	4.49		3.69	
IIIN	NA	10.0	10.0		11.0	
IIL	NA	10.0	10.0		10.0	
TPHL	NS	63.3	64.6		49.1	
TPLH	NS	57.9	64.2		32.4	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4001	QUAD 2-INPUT NOR	CMOS	48	2400

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	CD4001B		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	0		5K		10K		30K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD	NA	10.0	10.0		10.0		10.00	
VIIH	V	5.66	4.68		4.67		1.81	
VIL	V	5.02	4.36		2.91		FAIL	
IIH	NA	10.0	10.0		10.0		FAIL	
IIL	NA	10.0	10.0		10.0		FAIL	
TPHL	NS	68.8	68.4		46.9			
TPLH	NS	64.4	69.6		29.9			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4007	DUAL COMPLE PR+INV	COS/MDS	1019	5190

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4007A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7818	CO-60	5	VDD=7V; 1KHZ SQ WAVE (0-7V, 50% DUTY CYC) @ PIN 10

CUM. DOSE (RADS): 0

PARAMETERS	60K		150K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IL(VS=5V) NA	0.017	0.010	0.281	0.095	153.5	77.43	665.0	257.3
IL(VS=7V) NA	0.026	0.016	0.299	0.100	156.0	79.88	621.7	225.1
IL(VS=10V) NA	0.043	0.027	0.377	0.108	171.0	91.63	676.7	243.4
VTHN(1) V	1.634	0.012	0.961	0.052	0.461	0.050	0.370	0.059
VTHP(1) V	-1.72	0.075	-2.26	0.078	-2.69	0.081	-2.91	0.094
VIL(2) V	3.619	0.055	3.043	0.210	2.569	0.078	2.427	0.094
VIH(2) V	3.619	0.055	3.047	0.208	2.579	0.081	2.433	0.096

REMARKS: PARAMS. CONT. ON REC. 5191. (1)VS=7V, ID=10UA. (2)AV.(2PR.+INV).VS=7V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4007	DUAL COMPLE PR+INV	COS/MDS	1019	5191

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4007A		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	60K		150K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TTLH(VS=7) NS	24.5	1.7	30.0	1.6	37.8	2.6	40.7	1.5
TTLH(VS=7) NS	28	1.4	26	1.4	25.5	1.0	26	0.0
TPHL(VS=7) NS	20.3	1.26	23.5	1.29	28.0	1.63	31.0	2.65
TPHL(VS=7) NS	24.5	1.00	20.8	0.96	20.3	0.50	20.3	0.58
VNHL(3) V	3.619	0.055	3.043	0.210	2.569	0.078	2.428	0.094
VNMH(3) V	3.374	0.055	3.971	0.178	4.420	0.083	4.560	0.097

REMARKS: CONT. FROM REC. 5190. (3)AV.(2PR.+INV.).VS=7V.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
4011	QUAD NAND GATE	COS/MOS	1020 5200

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4011A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7824	CO-60	5	VDD=7V; 1KHZ SQ WAVE (0-7V, 50% DUTY CYC) @ PIN 10

CUM. DOSE (RADS): 0 50K 100K 200K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IL(VS=5V) PA	21	2	53	10	150	20	1510	201	6040	702
VOL(1) MV	29.3	0.75	29.2	0.63	29.9	0.74	30.6	1.76	32.6	0.80
VOH(1) MV	6.850	0.006	6.842	0.007	6.839	0.007	6.830	0.007	6.826	0.009
VTHN(1)(2) V	1.613	0.023	1.364	0.026	1.227	0.033	1.037	0.018	0.956	0.012
VTHP(1)(2) V	-1.88	0.036	-2.15	0.301	-2.29	0.038	-2.52	0.033	-2.71	0.034
IL(VS=7V) PA	29	4	61	12	177	22	1580	205	6320	507
IL(VS=10V) PA	37	6	77	13	223	28	1710	246	6660	445

REMARKS: CONTINUED ON RECORD 5201. (1)VS=7V. (2)ID=10UA.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
4011	QUAD NAND GATE	COS/MOS	1020 5201

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4011A		

LDC	RAD. TYPE	PART QTY.	BIAS
-----	-----------	-----------	------

CUM. DOSE (RADS): 0 50K 100K 200K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIL(1) V	3.358	0.027	3.096	0.030	2.966	0.031	2.774	0.030	2.656	0.029
VIH(1) V	3.372	0.032	3.114	0.026	2.984	0.033	2.788	0.030	2.676	0.029
TTLH(1) NS	37	2.28	38	2.39	39	3.21	47	3.91	49	2.41
TTHL(1) NS	37	2.28	37	2.28	37	1.87	37	1.92	38	1.48
TPH(1) V	22.4	1.140	24.6	1.342	24.6	1.342	28.0	2.450	29.2	0.837
TPHL(1) V	24.6	1.140	24.2	1.096	23.4	0.894	23.2	0.837	23.8	0.837

REMARKS: CONTINUED FROM REC. 5200. (1)VS=7V. *CONTINUED ON RECORD 5202

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
4011	QUAD NAND GATE	COS/MOS	1020 5202

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4011A		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):		0		50K		100K		200K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
* VNML(1)	V	3.329	0.027	3.067	0.030	2.936	0.031	2.743	0.030	2.623	0.029	
VNMH(1)	V	3.478	0.029	3.728	0.023	3.855	0.031	4.042	0.024	4.150	0.024	

REMARKS: *CONTINUED FROM RECORD 5201. (1)VS=7V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
40115	8 BIT INTERFACE	CMOS	49 2250

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD40115		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	4	UNK.

CUM. DOSE (RADS):		0		5K		8K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ID0	MA	3.53		4.310		9.110		
ICC	UA	2.05		17.35		0.320		
IDD	MA	1.18		1.42		7.24		
IOL	MA	17.08		17.33		18.86		
IDH	MA	8.33		8.90		10.60		

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4013	DUAL D FLIP-FLOP	CMOS	1-17	2300

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA CORPORATION	CD4013		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	3	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	75K		15K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DISS1(NA)	.008		2.7	.1100	3.8	.1607	5.4	.1500
DISS2(NA)	.137		3.0	.1300	4.8	.2179	6.2	.2500
DVTN(V)	1.64		1.6	.0171	1.5	.0216	1.45	.0303
DVTP(V)	1.51		1.6	.0061	1.65	.0064	1.7	.0086

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4013	DUAL D FLIP FLOP	CMOS	1-18	2310

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA CORPORATION	CD4013		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	3	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	75K		15K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DISS1	.207		.2	.0493	2.2	.3247	3.8	.7286
DISS2	.293		1.6	.0850	2.9	.3523	4.9	.8327
DVTN	1.67		1.6	.0215	1.55	.0250	1.45	.0332
DVTP	1.39		1.5	.0070	1.55	.0068	1.6	.0100

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4013	DUAL FLIP-FLOP	CMOS	50	2410

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TEXAS INS	CD4013A		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	UNK.

CUM. DOSE (RADS): 0 10K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOL(Q1) MV			9.895	.9699				
D VOL(Q2) MV			4988.	4990.				
D VOH(Q1) MV			-1.25	.4791				
D VOH(Q2) MV			-.598	.4050				

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4013	DUAL FLIP-FLOP	CMOS	50	2420

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4013B		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	UNK.

CUM. DOSE (RADS): 0 5K 10K 30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD	3.800		3.880		15.80		1970.	
I _{IH}	5.80		5.75		5.74		FAIL	
V _{IL}	4.40		4.48		4.50		FAIL	
I _{IH}	10.0		10.0		10.0		FAIL	
I _{IL}	10.0		10.0		10.0		FAIL	
TPH _L	117.0		118.0		89.2		FAIL	
TPH _H	49.8		50.0		52.8		FAIL	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4013	DUAL FLIP-FLOP	CMOS	50	2430

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	CD4013B		IRT CORP

LDC	RAD.	TYPE	PART QTY.	BIAS
UNK.	CO-60	5	UNK.	

CUM. DOSE (RADS) :		0		5K		10K		30K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD	UA	3.86		3.90		30.00		6.96	
VIH	V	5.58		5.62		5.56		FAIL	
VIL	V	4.64		4.60		4.43		FAIL	
IIH	NA	10.0		10.0		10.0		FAIL	
IIL	NA	10.0		10.0		10.0		49000	
TPHL	NS	113.0		111.0		112.0			
TPHL	NS	60.0		56.0		57.5			

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4013	DUAL D FLIP-FLOP	COS JS	1021	5210

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4013A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7824	CO-60	5	VDD=7V: 1KHZ SQ WAVE (O-TV, 50% DUTY CYC) • PIN 11

CUM. DOSE (RADS):		0		50K		100K		200K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IL (VS=5V)	NA	0.035	0.026	0.092	0.028	0.682	0.370	27.64	13.03	377.0	301.1
VOL (1)	MV	16.6	0.95	16.4	0.98	17.0	1.04	18.3	1.09	19.7	1.18
VOLH (1)	V	6.744	0.010	6.688	0.014	6.629	0.018	6.480	0.037	6.200	0.128
VTHN (1) (2)	V	1.769	0.078	1.477	0.078	1.548	0.080	1.776	0.080	4.148	6.122
VTHP (1) (2)	V	-1.92	0.071	-3.02	0.100	-3.79	0.124	-4.79	0.141	-5.45	1.682
IL (VS=7V)	PA	55	42	118	39	728	373	28880	14320	60800	28438
IL (VS=10V)	PA	94	72	183	71	1782	2327	30940	15350	65700	30768

REMARKS: PARAMS. CONTINUED ON REC. 5211 (1)VS=7V. (2)ID=10UA.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
4013	DUAL D FLIP-FLOP	COS/MOS	1021	5211

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4013A		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	50K		100K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIL(1)	3.272	0.102	2.680	0.104	2.448	0.113	2.202	0.131
VIH(1)	3.242	0.102	2.678	0.113	2.468	0.118	2.242	0.125
NS	46	3.29	61	3.35	77	5.18	119	26.10
TTLH(1)	52	6.23	54	4.00	61	5.93	74	3.77
NS	76	4.98	87	9.23	106	12.70	154	9.62
TPLH(1)	97	6.42	98	8.88	110	12.12	139	15.01
NS								

REMARKS: *CONTINUED FROM REC. 5210. (1)VS=7V. **PARAMS. CONT. ON REC. 5212.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
4013	DUAL D FLIP-FLOP	COS/MOS	1021	5212

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4013A		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	50		100K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TPW(MIN)** NS	78	6.65	75	6.10	79	6.76	97	6.99
FMX** P.Z	6914	425	6568	505	577	412	3894	327
VNML** MV	3255	101	2664	104	245	112	2154	131
VNMH** MV	3502	106	4010	115	418	114	4238	114

* TPW(MIN)** NS 78 6.65 75 6.10 79 6.76 97 6.99 164 66.07
 **VS=7V.

REMARKS: *CONTINUED FROM RECORD 5211. **VS=7V.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4014	8-STAGE S SHIFT REG	COS/MOS	1022	5220

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4014A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7826	CO 60	5	VDD=7V.

CUM. DOSE (RADS): 0 50K 100K 200K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IL(VS=5V) PA	279	273	2440	3992	8766	13177	20680	24379	17920	15918
VOL(1) MV	133	4	132	4	134	4	138	5	144	5
VOL(1) V	6.189	0.057	6.064	0.095	5.912	0.075	5.514	0.258	4.816	0.546
VTHN(1)(2) V	1.485	0.151	1.137	0.131	1.076	0.141	1.148	0.136	1.334	0.111
VTHP(1)(2) V	-2.05	0.223	-3.09	0.203	-3.67	0.150	-4.43	0.163	-4.99	0.154
IL(VS=7V) PA	492	571	2638	4086	9182	13551	21480	25101	18500	16243
IL(VS=10V) PA	825	1063	3030	4139	10290	14709	23620	26888	20020	16765

REMARKS: PARAMETERS CONTINUED ON RECORD 5221. (1)VS=7V. (2)ID=20UA.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4014	8-STAGE S SHIFT REG	COS/MOS	1022	5221

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4014A		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0 50 100 200 300

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIL(1) MV	3046	210	2510	198	2252	181	1966	169	1830	163
VIH(1) MV	3016	210	2494	191	2240	178	1968	168	1838	164
TTLH(1) NS	137	8	172	22	214	37	310	70	450	116
TTHL(1) NS	95	6	96	5	96	5	107	16	132	18
TPLH(1) NS	197	8	233	14	278	23	384	52	520	78
TPHL(1) NS	171	9	185	8	205	11	264	30	342	36

REMARKS: *CONT. FROM REC 5220. (1)VS=7V. PARAMETERS CONTINUED ON RECORD 5222.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO., RECORD
4014	8-STAGE S SHIFT REG	COS/MOS	1022 5222

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4014A		

QTY.	PART	TYPE	RAD.	BIAS
1	1000	1000	1000	1000

CUM. DOSE (RADS) :	0		50K		100K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
* TPW(MIN)** NS	102	7	105	8	112	7	139	10	166	11
FVMAX** KHZ	4928	351	4796	356	4484	271	3622	259	2478	549
VNML** MV	2913	209	2378	198	2118	181	1828	169	1686	163
VNMH** MV	3173	173	3570	132	3672	130	3564	160	2978	408

REMARKS: *CONTINUED FROM RECORD 5221. **VS=7V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4015	4-STAGE SHIFT REG	CMOS	24-36	2460

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	Q24015MW	COMMERCIAL	POCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8039	CO-60	4	VDD=9V=DATA. ALL OTHER PINS TIED TO GND

CUM. DOSE (RADS) :		0		10K		20K		30K		50K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D V0H	MV			-23.7	4.952	-161.	26.93	-255.	43.00	-6700	04630
D V0D	UA			219.0	55.00	1.4E3	269.	986.3	407.2	2.3E3	879.0

REMARKS:

GENERIC PART NUMBER: 4015

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4015	4-STAGE SHIFT REG.	CMOS	24-35	2520

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	CD4015MW	COMMERCIAL	ROCKWELL

LDC RAD. TYPE PART QTY. BIAS

8011 CO-60 4 VDD=9V=DATA, ALL OTHER PINS TIED TO GND

CUM. DOSE (RADS): 0 10K 20K 30K 50K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOH	-69.3	20.76	-378.	81.07	-170.	55.37	-923.	454.3		
D IDD	575.5	193.8	1.1E3	845.6	1.2E3	354.4	2.2E3	270.6		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4016	QUAD BILATERAL SW.	CMOS	24-37	2470

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	CD4016MW	COMMERCIAL	ROCKWELL

LDC RAD. TYPE PART QTY. BIAS

7902 CO-60 5 VDD=10V, 2 SWITCHES ON, 2 SWITCHES OFF

CUM. DOSE (RADS): 0 10K 20K 30K 50K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D IDD(ON)	NA		0.040	0.055	0.040	0.055	0.080	0.045	245.5	533.6
D IDD(OFF)	NA		0.120	0.045	1.5E3	3.4E3	10.16	14.42	4.1E3	3.7E3
D IL(A-SW)	NA		0.000	0.173	193.0	431.4	0.180	0.522	7.0E3	4.4E3
D IL(B-SW)	NA		0.200	0.122	703.6	1.5E3	67.34	83.15	1.2E3	2.8E3
D IL(C-SW)	NA		0.040	0.089	280.0	598.4	26.90	47.52	1.5E3	2.7E3
D IL(D-SW)	NA		0.000	0.000	2.0E3	4.4E3	.500	0.686	8.0E3	4.5E3

REMARKS:

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 GENERIC PART NUMBER: 4016
 FUNCTION: QUAD BILATERAL SW.
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 24-38 2480

 MANUFACTURER: NATIONAL
 PART NUMBER: CD4016MW
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: ROCKWELL

LDC RAD. TYPE PART QTY. BIAS
 8039 CO-60 4 VDD=10V, 2 SWITCHES ON, 2 SWITCHES OFF

CUM. DOSE (RADS): 0 10K 20K 30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D IDD(ON) NA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D IDD(OFF) NA	5.7E3	3.8E3	7.0E3	0.000	666.2	3.559		
D IL(A-SW) NA	0.007	0.005	8.2E3	2.2E3	9.7E3	81.59		
D IL(B-SW) NA	408.2	285.6	0.027	0.042	0.260	0.071		
D IL(C-SW) NA	0.222	0.418	0.497	0.928	0.725	1.004		
D IL(D-SW) NA	0.450	0.173	8.2E3	2.2E3	9.7E3	125.6		

REMARKS:

 GENERIC PART NUMBER: 40161
 FUNCTION: 4-BIT BINARY COUNT
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 25-20 2530

 MANUFACTURER: FSC
 PART NUMBER: F40161DM
 SPECIFICATION: AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7618 CO-60 4 APPLICATION CIRCUIT

CUM. DOSE (RADS): 0 2.5K 10K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VCH **	4PASS		4PASS					
VOL	4PASS		4PASS					
VTHN	4PASS		4PASS					
VTHP	4PASS		4PASS					
FUNCTIONALITY	4PASS		4PASS					
IDD QUIESCENT	4PASS		4PASS					
IDD DYNAMIC	4PASS		4PASS					

REMARKS: **IIN, IOH, IOL, TD PASS ALL DOSES. *3 AT VDD=5V, ALL AT 15V (VI DEGRAD.)

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GENERIC PART NUMBER 40174 FUNCTION HEX D FLIPFLOP TECHNOLOGY CMOS REF.NO. RECORD 25-21 2670

MANUFACTURER F40174DM PART NUMBER F40174DM SPECIFICATION AEROJET DATA SOURCE AEROJET

LDC RAD. TYPE PART QTY. BIAS
7547 CO-60 5 +5V, 500-KHZ SQUARE-WAVE CLOCK.

CUM.DOSE(RADS): 0 15.3K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
VOH *** 5PASS 5PASS
VOL 5PASS 5PASS
IIN 5PASS **
IOH 5PASS 5PASS
IOL 5PASS 5PASS
IDD QUIESC. A 7E-10 3E-10 *3E-3 1E-3
IDD DYNAMIC A 3E-4 1E-5 9E-3 4E-3
REMARKS: ***TLH, TLH PASS ALL DOSES. *SPEC. MAX.=2UA. **9 OF 30 FF'S FAIL.

GENERIC PART NUMBER 4019 FUNCTION QUAD 2 INPUT MUX TECHNOLOGY CMOS REF.NO. RECORD 25-24 2620

MANUFACTURER F4019DM PART NUMBER F4019DM SPECIFICATION AEROJET DATA SOURCE AEROJET

LDC RAD. TYPE PART QTY. BIAS
7653 CO-60 5 APPLICATION CIRCUIT

CUM.DOSE(RADS): 0 2.5K 10K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
FUNCTIONALITY 5PASS 5PASS 5FAIL
VOH ** 5PASS 5PASS ***
VOL 5PASS 5PASS *FAIL
IIN 5PASS 5PASS 5FAIL
IOH 5PASS 5PASS ***
IDD QUIESC. 5PASS ***
IDD DYNAMIC 5PASS ***
REMARKS: **IOL, TLH, TLH PASSED ALL DOSES. *SOME. ***POSS. FAIL (DATA NOT SPECIF)

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 GENERIC PART NUMBER: 4020

 FUNCTION TECHNOLOGY REF. NO. RECORD
 14-STAGE BIN COUNTER COS/MDS 1022A 5230

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE
 RCA CD4020A TRW

 LDC RAD. TYPE PART QTY. BIAS
 7824 CO-60 5 VDD=7V; 1KHZ SQ WAVE (O-7V 50% DUTY CYC) TO PIN 10

CUM. DOSE (RADS): 0 50K 100K 200K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 ILA(VS=5V) NA 2.980 5.887 2000. 4472. 1005. 2233. 407.8 532.4 400.4 245.7
 ILA(VS=7V) NA 3.497 6.457 2201. 4919. 1025. 2278. 1076. 2027. 378.0 234.5
 ILA(VS=10V) NA 4.106 6.997 2401. 5366. 1046. 2322. 1148. 2154. 395.2 218.9
 ILB(VS=5V) NA 2.741 5.518 2000. 4472. 981.1 2191. 403.9 434.9 420.4 250.8
 ILB(VS=7V) NA 3.197 6.066 2200. 4919. 1001. 2235. 784.4 1742. 85.22 170.4
 ILB(VS=10V) NA 3.813 6.890 2401. 5366. 1022. 2280. 844.3 1876. 84.72 170.7
 VDL(VS=7V) MV 21.2 4.33 21.8 4.20 20.7 0.73 22.4 1.94 28.1 5.52
 REMARKS: PARAMETERS CONTINUED ON RECORD 5231.

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD
 4020 14-STAGE BIN COUNTER COS/MDS 1022A 5231

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE
 RCA CD4020A

 LDC RAD. TYPE PART QTY. BIAS
 CO-60

CUM. DOSE (RADS): 0 50K 100K 200K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VOH(1) MV 6582 23 6542 32 6482 30 6376 38 6247 52
 VTHN(1)(2) MV 1814 30 1477 42 1424 50 1556 53 7880 3546
 VTHP(1)(2) MV -2797 69 -3848 204 -4511 51 -4789 39 -8765 68
 VIL(1) MV 3442 67 2814 48 2676 40 2410 44 2270 44
 VIH(1) MV 3470 73 2954 47 2710 41 2452 52 2316 44
 TTLH(1) NS 52.0 2.739 62.0 4.472 68.0 5.701 91.0 2.236 118.0 8.367
 TTL(1) NS 45.0 3.536 46.0 8.216 50.0 11.73 53.0 4.472 64.0 5.477
 REMARKS: CONT. FROM REC. 5230. (1)VS=7V. (2)ID=20UA. CONTINUED ON REC. 5232.

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

4020 14-STAGE BIN COUNTR COS/MOS 1022A 5232

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

RCA CD4020A

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS) :											
0		50K		100K		200K		300K			
MEAN		SD		MEAN		SD		MEAN		SD	
PARAMETERS											
TPLH(1)		NS		174.0		6.519		222.0		11.51	
TPHL(1)		NS		141.0		5.477		185.0		20.00	
TPW(MIN)(1)		NS		35.6		1.67		38.8		1.64	
FMAX(1)		KHZ		4462		207		3724		135	
				3076		102		2134		79	
				496.0		25.10		360.0		11.73	
				342.0		10.95		267.0		7.583	
				90.6		7.92		62.2		2.49	
				1520		97		2134		79	

REMARKS: CONTINUATION FROM RECORD 5231. (1)VS=7V.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

4027 DUAL J-K FLIP-FLOP CMOS 1-19 2320

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

RCA CORPORATION CD4027 JPL

LDC RAD. TYPE PART QTY. BIAS

7936 CO-60 6 UNK.

CUM. DOSE (RADS): 0

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DISS1	.237	1.35	.1859	2.7	.2971	5.2	.8004	11.	2.104	
DISS2	.286	1.4	.3149	2.9	.2058	6.4	.8483	13.	3.305	
DVTN	1.44	1.35	.0365	1.3	.0139	1.25	.0188	1.25	.0202	
DVTP	1.84	1.4	.6709	1.42	.6862	1.45	.7109	1.6	.7481	

REMARKS:

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 GENERIC PART NUMBER: 4027
 FUNCTION: DUAL JK MS FLIPFLOP
 TECHNOLOGY: COS/MOS
 REF. NO. RECORD: 1023 5240

 MANUFACTURER: RCA
 PART NUMBER: CD4027A
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 7819 CO-60 5 VDD=7V; 1KHZ SQ WAVE (0-7V, 50% DUTY CYC) TO PIN 3.

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 IL(VS=5V) NA 0.105 0.026 0.164 0.041 4.100 1.639 207.3 205.5 832.0 142.5
 IL(VS=7V) NA 0.136 0.025 0.203 0.026 2.210 1.787 29.80 16.88 323.4 328.8
 IL(VS=10V) NA 0.177 0.038 0.248 0.064 1.740 0.219 28.80 19.18 86.80 81.05
 VOL(1) MV 15.57 0.126 15.42 0.238 15.68 0.194 16.59 0.211 17.92 0.599
 VDH(1) MV 6817 3 6790 6 6770 8 6725 10 6677 17
 VTHN(1)(2) MV 1603 6 1305 7 1251 14 1301 23 1435 16
 VTHP(1)(2) MV -1709 11 -2477 37 -2980 55 -3648 79 -4076 95
 REMARKS: CONTINUED ON RECORD 5241. (1)VS=7V. (2)ID=10UA.

 GENERIC PART NUMBER: 4027
 FUNCTION: DUAL JK MS FLIPFLOP
 TECHNOLOGY: COS/MOS
 REF. NO. RECORD: 1023 5241

 MANUFACTURER: RCA
 PART NUMBER: CD4027A
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VIH(1) MV 3558 22 3140 29 2912 33 2652 43 2524 42
 TTLH(1) NS 44.0 2.828 48.4 2.966 54.8 2.280 69.6 0.894 82.0 2.739
 TTHL(1) NS 54.6 2.967 58.8 5.215 66.4 1.673 94.0 8.216 166.0 38.31
 TPLH(1) NS 77.0 2.000 82.4 2.608 92.8 1.095 114.0 8.216 139.0 8.216
 TPHL(1) NS 105.2 3.033 107.6 2.966 118.0 3.742 160.0 7.906 244.0 17.82
 TPW(MIN)(1) NS 106 2.5 116 7.8 129 2.2 179 15.0 286 41.1
 FMAX(1) KHZ 4814 146 4502 223 4070 77 2974 173 1768 257
 REMARKS: CONTINUATION FROM RECORD 5240. (1)VS=7V. CONTINUED ON RECORD 5242.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4027	DUAL JK MS FLIPFLOP	COS/MOS	1023	5242

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4027A		

LDC	RAD.	TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):		0		50K		100K		200K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VNML *	MV	3542	22	3125	29	2896	33	2635	43	2506	42
VNML *	MV	3259	23	3650	32	3858	31	4073	41	4153	35

REMARKS: CONTINUATION FROM RECORD 5241. *VS=7V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4028	GATE	CMDS	51	2440

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4028B		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CD-60	5	UNK.

CUM. DOSE (RADS):		0		5K		10K		30K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
IDD	UA	10000		10000		10000		367	
VIIH	V	5.72		5.21		4.95		FAIL*	
VIL	V	4.93		4.84		4.58		FAIL*	
IIH	NA	10.0		10.0		10.0		10.0	
IIL	NA	10.0		10.0		10.0		10.0	
TPHL	NS	77.3		77.3		73.9		FAIL*	
TPIH	NS	67.0		55.4		55.8		FAIL*	

NS 67.0 33.4
REMARKS: *NUMBER OF FAILURES UNSPECIFIED.

 GENERIC PART NUMBER: 4029
 FUNCTION: UP/DOWN COUNTER
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 24-39 2490

 MANUFACTURER: NATIONAL
 PART NUMBER: CD4029BMW
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: ROCKWELL

LDC RAD. TYPE PART QTY. BIAS
 8011 CO-60 4 VDD=IN1=IN2=U/D=B/D=PE=5V, REST TIED TO GND

CUM. DOSE (RADS): 0

PARAMETERS	10K		20K		30K	
	MEAN	SD	MEAN	SD	MEAN	SD
D IDD VA	403.7	18.72	3.2E3	87.03	7.4E3	163.7
D VOH(P-2) MV	-31.5	3.307	-287.	32.82	-685.	67.06
D VOH(P-6) MV	-39.4	2.601	-384.	24.83	-101.	0.177
D VOH(P-7) MV	-15.8	1.024	-114.	8.103	-148.	10.87
D VOL(P-7) MV	0.750	0.100	5.725	0.320	9.8E3	9.238
D VOL(P-11) MV	0.525	0.050	4.425	0.330	300.4	55.31
D VOL(P-14) MV	0.650	0.100	5.850	0.300	82.35	31.69

REMARKS:

 GENERIC PART NUMBER: 4029
 FUNCTION: UP/DOWN COUNTER
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 24-40 2500

 MANUFACTURER: R.C.A.
 PART NUMBER: CD4029BMW
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: ROCKWELL

LDC RAD. TYPE PART QTY. BIAS
 7924 CO-60 4 VDD=IN1=IN2=U/D=B/D=PE=5V, REST TIED TO GND

CUM. DOSE (RADS): 0

PARAMETERS	10K		20K		30K		50K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D IDD VA	0.082	0.072	0.060	0.120	0.092	0.026	0.097	0.115
D VOH(P-2) MV	0.100	0.200	-0.325	0.126	-0.075	0.096	-0.425	0.126
D VOH(P-6) MV	0.050	0.100	-0.175	0.150	0.000	0.000	-0.500	0.082
D VOH(P-7) MV	0.100	0.115	-0.250	0.100	0.000	0.000	-0.475	0.050
D VOL(P-7) MV	-0.025	0.050	-0.275	0.050	-0.150	0.058	-0.550	0.058
D VOL(P-11) MV	0.075	0.050	-0.225	0.050	-0.100	0.082	-0.500	0.000
D VOL(P-14) MV	0.000	0.141	-0.275	0.126	-0.150	0.100	-0.550	0.100

REMARKS:

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 4029 UP/DOWN COUNTER CMOS 24-41 2510

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 NATIONAL CD4029BMW COMMERCIAL ROCKWELL

 LDC RAD. TYPE PART QTY. BIAS

 8040 CO-60 4 VDD=IN1=IN2=U/D=B/D=PE=5V, REST TIED TO GND

 CUM.DOSE(RADS): 0 5K 10K 15K 20K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 D IDD UA 1.000 2.000 71.09 110.1 255.7 410.1 748.5 1.1E3
 D VOH(P-2) MV -.300 0.141 -5.53 7.629 -20.8 33.82 -67.9 94.17
 D VOH(P-6) MV -.275 0.171 -5.38 7.598 -20.2 33.37 -67.5 96.73
 D VOH(P-7) MV -.325 0.126 -2.80 3.350 -7.63 11.95 -20.4 30.32
 D VOL(P-7) MV -.400 0.115 -.150 0.100 -.025 0.618 0.925 2.130
 D VOL(P-11) MV -.400 0.141 -.150 0.100 0.100 0.938 0.550 1.507
 D VOL(P-14) MV -.425 0.150 -.150 0.058 0.050 0.968 0.925 2.254

REMARKS:

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 4031B 64 BIT SHIFT REG CMOS 401-9 2860

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 RCA CD4031B INSAT PCC 860 FORD AEROSPACE

 LDC RAD. TYPE PART QTY. BIAS

 7914 CO-60 5 VDD=+18V

 CUM.DOSE(RADS): 0 53K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 IDD NA 13.09 7.499
 IIH NA 7.428 1.426
 VOH1 V 5.000 0.0
 IOL MA 12.49 9.840
 IOH MA -2.66 .1531
 VIH1 V 5.000 0.0
 VP V 1.950 .1173

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4035	4-STG PI/PO SHFTREG	COS/MOS	1024	5250

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4035A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7824	CO-60	5	VDD=7V.

CUM. DOSE (RADS): 0

PARAMETERS	0		50K		100K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IL(VS=5V) PA	15	9	198	67	780	320	4630	2729	19050	30657
IL(VS=7V) PA	20	13	212	70	822	330	4810	2833	19380	31010
IL(VS=10V) PA	34	16	239	67	932	367	5300	3068	20830	32538
VOL(1) MV	22.3	1.7	21.8	1.0	22.6	1.1	27.7	1.2	26.5	1.3
VOL(1) MV	6716	16	6704	18	6694	20	6689	16	6675	25
VTHN(1)(2) MV	1535	18	1326	29	1257	101	1213	149	1345	358
VTHP(1)(2) MV	-2470	27	-2689	77	-2863	88	-3053	164	-3259	293

REMARKS: CONTINUED ON RECORD 5251. (1)VS=7. (2)ID=20UA.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4035	4-STG PI/PO SHFTREG	COS/MOS	1024	5251

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4035A		

LDC	RAD. TYPE	PART QTY.	BIAS
	CO-60		

CUM. DOSE (RADS): 0

PARAMETERS	0		50K		100K		200K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIH(1) MV	3184	50	3032	57	3036	49	3132	43	3172	118
TTLH(1) NS	43	3	46	4	48	6	52	3	56	7
TTLH(1) NS	41	2	44	2	48	3	51	2	57	3
TPLH(1) NS	125	5	131	7	140	12	152	6	171	17
TPHL(1) NS	144	5	149	7	154	12	166	10	186	25
TPW(MIN)(1) NS	60	0	58	3	61	9	65	6	74	13
FMAX(1) KHZ	5754	222	5480	292	5188	144	4640	143	4064	401

REMARKS: CONTINUATION FROM RECORD 5250. (1)VS=7V. CONTINUED ON RECORD 5252.

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GENERIC PART NUMBER 4035
FUNCTION 4-STG PI/PO SHFTREG
TECHNOLOGY COS/MOS
REF. NO. RECORD 1024 5252

MANUFACTURER RCA
PART NUMBER CD4035A
SPECIFICATION
DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS
CO-60

CUM. DOSE (RADS): 0
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
VNML* MV 3162 49 3010 56 3013 49 3107 43 3146 119
VNMH* MV 3460 169 3672 47 3658 32 3557 40 3503 102

REMARKS: CONTINUATION FROM RECORD 5251. *VS=7V.

GENERIC PART NUMBER 4044
FUNCTION 6J4D NAND R/S LATCH
TECHNOLOGY CMOS
REF. NO. RECORD 52 2450

MANUFACTURER MOTOROLA
PART NUMBER MC4044
SPECIFICATION
DATA SOURCE IRT CORP

LDC RAD. TYPE PART QTY. BIAS
UNK. CO-60 UNK UNK.

CUM. DOSE (RADS): 0 350K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
D V(OUT) V 0.034

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4046	M/P PHASE-LOCKED/L	CMOS	53	2260

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
R.C.A.	CD4046B		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	0		5K		1m		30K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ID0	UA	84.00	93.00		112.0		41620	
VZ	V	5.482	5.277		5.360		5.490	
VIH	V	5.38	5.25		5.12		FAIL	
VIL	V	5.32	4.79		4.86		FAIL	
IIH	NA	10.00	10.00		10.00		FAIL	
IIL	NA	10.00	10.00		10.00		FAIL	
VCO	KHZ	181.8	182.5		168.4		FAIL	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4049	HEX INVERTING BUFF	CMOS	54	2270

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
R.C.A.	CD4049UB		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	0		5K		10K		30K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDC	NA	10.00	10.00		45.00		56000	
VIH	V	8.5	7.35		7.26		FAIL	
VIL	V	1.5	00.81		00.42		FAIL	
IIH	NA	10.00	10.00		10.00		FAIL	
IIL	NA	10.00	10.00		10.00		FAIL	
TPHL	NS	17.30	15.10		14.70		FAIL	
TPLH	NS	21.20	20.10		20.70		FAIL	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4049	HEX INVERTING BUFF	CMOS	54	2280

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	CD4049SUB		IRT CORP

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 5 UNK.

CUM. DOSE (RADS): 0 5K 10K 30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD	10.0		10.0		1640.		26MA	
VIH	8.42		7.25		7.10		FAIL	
VIL	1.54		1.26		00.65		FAIL	
IIL	10.00		10.00		10.00		FAIL	
TPHL	19.10		16.10		15.70		FAIL	
TPLH	21.30		20.80		21.00		FAIL	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4049	HEX/BUFFER CONVERT	CMOS	1-20	2330

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA CORPORATION	CD4049		JPL

LDC RAD. TYPE PART QTY. BIAS
 NONE CO-60 3 UNK.

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ISS1	.0233		.3		1.49		3.4	
ISS2	.0257		1.7522		2.1		3.45	
VIN(V)	1.05		1.0566		.96		.92	
VTP(V)	1.28		1.35		1.36		1.4	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4051	8 CHANNEL MUX DEMUX	CMOS	25-30	2560

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FSC	F4051DM		AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7722 CO-60 5 V+ 5V, TYPICAL APPLICATION CIRCUIT

CUM. DOSE (RADS): 0 12K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD UA	918	122	54400	20452				

(AT 250 KHZ)

REMARKS: ALL DEVICES NONOPERABLE AFTER 12K RAD, DUE TO EXCESSIVE IDD (DYNAMIC).

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4051	8 CHANNEL MUX DEMUX	CMOS	25-29	2630

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4051BD/XZ		AERCJET

LDC RAD. TYPE PART QTY. BIAS
 7719 CO-60 5 V+=5V, TYPICAL APPLICATION CIRCUIT

CUM. DOSE (RADS): 0 12K 50K 160K 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VO	5PASS		5PASS		5PASS		5PASS	
IL	5PASS		5PASS		5PASS		5PASS	
IIN	5PASS		5PASS		5PASS		5PASS	
ID	5PASS		5PASS		5PASS		5PASS	
ID	5PASS		5PASS		5PASS		5PASS	
THL	5PASS		5PASS		5PASS		5PASS	
TLH	5PASS		5PASS		5PASS		5PASS	

REMARKS: *2 FAILED IDD AND FUNCTIONALLY: INCORRECTLY DECODED CHANNEL TO TURN ON

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4052	ANALOG MUX/DEMUX	CMOS	1-21	2340

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA CORPORATION	CD4052		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	3	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	75K		15K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DISS1	.272		2.45	.4652	4.4	.7489	7.2	1.090
DISS2	.366		3.	.5260	5.	.8736	8.	1.224
DVTN(V)	1.81		1.7	.0762	1.65	.0713	1.61	.0663
DVTP(V)	1.80		1.9	.0302	1.95	.0338	2.	.0374

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4052	ANALOG MUX/DEMUX	CMOS	1-22	2350

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA CORPORATION	CD4052		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	3	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	75K		15K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DISS1	.0318		3.2	.6413	4.8	.9168	7.6	1.264
DISS2	.0402		3.8	.7566	5.4	1.081	8.2	1.395
DVTN	1.80		1.71	.0465	1.7	.0452	1.65	.0437
DVTP	1.80		1.9	.0346	1.95	.0367	2.	.0429

REMARKS:

 GENERIC PART NUMBER: 4066
 FUNCTION: QUAD BILATERAL SW. CMDS
 REF. NO. RECORD: 1-23 2360
 TECHNOLOGY: CMDS

 MANUFACTURER: RCA CORPORATION
 PART NUMBER: CD4066
 SPECIFICATION: JPL
 DATA SOURCE: JPL

 LDC RAD. TYPE PART QTY. BIAS
 NONE CO-60 3 UNK.

CUM. DOSE (RADS): 0
 75K 15K 300K 600K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 DISS1 .197 1.25 .0252 2.8 .0624 5.2 .2804 9.6 .3786
 DISS2 .227 1.7 .1411 3.4 .2530 6.2 .3969 11. .1155
 DVIN(V) 1.65 1.55 .0040 1.5 .0067 1.45 .0150 1.4 .0173
 DVTP(V) 1.56 1.65 .0232 1.7 .0251 1.75 .0218 1.9 .0208

REMARKS:

 GENERIC PART NUMBER: 4066
 FUNCTION: QUAD SWITCH CMDS
 REF. NO. RECORD: 25-32 2570
 TECHNOLOGY: CMDS

 MANUFACTURER: RCA
 PART NUMBER: CD4066BD
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

 LDC RAD. TYPE PART QTY. BIAS
 7804 CO-60 5 UNK.

CUM. DOSE (RADS): 0
 2.5K 10K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 VO 5PASS 5PASS
 IIL 5PASS 5PASS
 IL 5PASS *
 IDD QUIESCENT 5PASS **
 IDD DYNAMIC 5PASS
 THL 5PASS 5PASS
 TLH 5PASS 5PASS
 REMARKS: *5FAIL: MEAN=2.0UA, MAX=3.0UA. **5FAIL: MEAN=3.9UA, MAX=6.0UA.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4069	HEX INVERTER	CMOS	80	2850

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	406GU3	MIL-M-38510/174 A2	RCA

LDC	RAD. TYPE	PART QTY.	BIAS
8095	CO-60	4	10V

CUM. DOSE (RADS) :			0			100K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVNTH V					.2000	.04		
DVPTH V					.4600	.03		

REMARKS: LDC = (METAL) EVAPORATION RUN

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4070	QUAD XOR	CNDS	25-26	2640

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FSC	F4070DM		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7651	CO-60	5	APPLICATION CIRCUIT

CUM.DOSE(RADS):	0		2.5K		10K	
	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS						
VOH **	5PASS		*FAIL		*FAIL	
VOL	5PASS		5PASS		*FAIL	
VTHN	5PASS		5PASS		5PASS	
VTHP	5PASS		5PASS		5PASS	
IDD QUIESCENT	5PASS		5FAIL		5FAIL	
IDD DYNAMIC	5PASS		5PASS		5PASS	
IIN	5PASS		*FAIL		5FAIL	
REMARKS:	**IOH,IOL,THI,TLH PASS ALL DOSES. *SOME					

IN SPASS SPAIL SPAIL
REMARKS: **IOH,IOL,THL,TLH PASS ALL DOSES. *SOME

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4070	QUAD XOR	CMOS	25-25	2660

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4070BD		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7810	CO-60	5	UNK.

CUM. DOSE (RADS):	0		2.5K		10K	
	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS						
VOH *	5PASS		5PASS		5FAIL	
VOL	5PASS		5FAIL		5FAIL	
VTHN	5PASS		5PASS		5FAIL	
VTHP	5PASS		5PASS		5FAIL	
IIN	5PASS		5PASS		5PASS	
IOH	5PASS		5PASS		5FAIL	
IDQ QUIESCENT	5PASS		5PASS		5FAIL	
REMARKS: *IOL PASSED ALL DOSES.						

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4070	QUAD EXCLU OR GATE	CMOS	81	2840

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	4070B	MIL-M-38510/172A A2	RCA

LDLC	RAD. TYPE	PART QTY.	BIAS
7933	CO-60	11	10V

PARAMETERS	CUM. DOSE (RADS)					
	0			100K		
	MEAN	SD		MEAN	SD	
D VNTH				.68	.10	
D VPTH				.38	.07	

REMARKS: LDC = INSPECTION LOT NO.

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 GENERIC PART NUMBER: 4071

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4071	QUAD 2INPUT OR GATE	CMOS	82	2530

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	4071B	MIL-M-38510/171A	RCA

LDC	RAD. TYPE	PART QTY.	BIAS
7946	CO-60	11	10V

CUM. DOSE (RADS): 0 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
DVNTN	V	.43	.02			
DVPTH	V	.43	.05			

REMARKS: LDC = INSPECTION LOT NO.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4072	DUAL 4INPUT OR GATE	CMOS	83	2820

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	4072B	MIL-M-38510/171A	RCA

LDC	RAD. TYPE	PART QTY.	BIAS
7934	CO-60	11	10V

CUM. DOSE (RADS): 0 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
DVNTN	V	.39	.15			
DVPTH	V	.54	.12			

REMARKS: LDC = INSPECTION LOT NO.

 GENERIC PART NUMBER: 4072

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4073	TRIPLE 3IN AND GATE	CMOS	84	2810

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	4073B	MIL-N-38510/170A A2	RCA

LDC	RAD. TYPE	PART QTY.	BIAS
7946	CO-60	10V	

CUM. DOSE(RADS):		O		100K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN
DVNTN	.34	.21			
DVPTH	.37	.06			

REMARKS: LDC = INSPECTION LOT NO.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4075	TRIPLE 3IN OR GATE	CMOS	85	2800

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4075BF/B	MIL-M-38510/171A	RCA

LDC	RAD. TYPE	PART QTY.	BIAS
8006	CO-60	11	UNK.

CUM. DOSE(RADS):		O		100K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN
DVNTN	.41	.15			
DVPTH	.57	.11			

REMARKS: LDC = INSPECTION LOT NO.

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GENERIC PART NUMBER	4077	FUNCTION	QUAD EXCLU NOR GATE	TECHNOLOGY	CMOS	REF.NO.	86	RECORD	2780

MANUFACTURER	RCA	PART NUMBER	4077B	SPECIFICATION	MIL-M-38510/172A A1	DATA SOURCE	RCA		

LDC	RAD. TYPE	PART QTY.	BIAS						
6595	CO-60	11	10V						
CUM.DOSE(RADS):				0	100K				
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVNTH		V		1.62	.052				
DVPTH		V		.88	.13				

REMARKS: LDC = ER NO.

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GENERIC PART NUMBER	4077	FUNCTION	QUAD EXCLU NOR GATE	TECHNOLOGY	CMOS	REF.NO.	86	RECORD	2790

MANUFACTURER	RCA	PART NUMBER	4077B	SPECIFICATION	MIL-M-38510/172A A1	DATA SOURCE	RCA		

LDC	RAD. TYPE	PART QTY.	BIAS						
8186	CO-60	16	10V						
CUM.DOSE(RADS):				0	100K				
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVNTH		V		.48	.05				
DVPTH		V		.41	.05				

REMARKS: LDC = ER NO.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
4078	8-INPUT NOR GATE	CMOS	25-27 2650

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	CD4078BD		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7738	CO-60	5	UNK.

CUM. DOSE (RADS): 0 10K ** 40K 130K 250K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH *	5PASS		5PASS		5PASS		5PASS		2FAIL	
VOL	5PASS		5PASS		5PASS		5PASS		5PASS	
IIN	5PASS		5PASS		5PASS		5PASS		5PASS	
IDD QUIESCENT	5PASS		5PASS		5PASS		5PASS		5PASS	
IDD DYNAMIC	5PASS		5PASS		5PASS		5PASS		5PASS	
IDP	5PASS		5PASS		5PASS		5PASS		1FAIL	
IDN	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *VTHN, VTHP, THL, TLH PASS ALL DOSES. **ALL PARS. PASSED 1ST (2.5K) DOSE

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
4081	QUAD 2-INPUT AND	CMOS	1-24 2370

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMICONDUCT	CD4081		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
733	CO-60	5	UNK.

CUM. DOSE (RADS): 0 1K 3K 6K 15K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DISS1(UA)	00151		00011 .0001		3.5 .4926		60. 4.834		400. 33.07	
DISS2(UA)	00134		00011 .0001		15. 3.364		500. 37.25		5000. 257.0	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4081	QUAD 2IN AND GATE	CMOS	87	2770

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	4081B	MIL-M-38510/170 A2	RCA

LDC	RAD. TYPE	PART QTY.	BIAS
7822	CO-60	24	10V

CUM. DOSE (RADS): 0 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVNTN	V	.43	.09					
DVPTH	V	.47	.06					

REMARKS: LDC = ER NO.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4081	GATE	CMOS	55	2890

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
R C A	CD4081B		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VDD=15V, VSS=GND

CUM. DOSE (RADS): 0 5K 10K 30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD	UA	.010	.010	17.6	717.0			
VIH	V	5.82	5.60	5.10	FAIL			
VIL	V	4.93	4.77	4.47	3.610			
IIH	NA	10.0	10.0	10.0	10.00			
IIL	NA	10.0	10.0	10.0	10.00			
TPLH	NS	45.2	39.4	39.3	FAIL			
TPLH	NS	37.1	42.4	40.8	FAIL			

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4082	DUAL 4IN AND 3ATE	CMDS	88	2760
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
RCA	4082B	MIL-M-38510/170A A2	RCA	

LDC	RAD. TYPE	PART QTY.	BIAS
7395	CO-60	11	10V

CUM. DOSE (RADS): 0 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
OVNTH	V		.08	.03				
OVPTH	V		.62	.05				

REMARKS: LDC = ER NO.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
085	2 2WIDE 2IN A/OR IN	CMOS	89	2750

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
CA	40858	MIL-M-3510/172 A A2	RCA

DC	RAD.	TYPE	PART	QTY.	BIAS
946	C0-60		11		10V

UM.DOSE(RADS): 0 100K

PARAMETERS										
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VNTH	V		.27	.06						
VPTH	V		.35	.05						

REMARKS: LDC = INSPECTION LOT NO.

 GENERIC PART NUMBER: 4086
 FUNCTION: EXP 4W 2IN A/OR INV
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 90 2740

 MANUFACTURER: RCA
 PART NUMBER: 4086B
 SPECIFICATION: MIL-M-38510/172A A2
 DATA SOURCE: RCA

 LDC RAD. TYPE PART QTY. BIAS
 7933 CO-60 11 10V

CUM. DOSE (RADS): 0 100K
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD
 DVNTH V .29 .07
 DVPTH V .4 .08

 REMARKS: LDC= INSPECTION LOT NO.

 GENERIC PART NUMBER: 4098
 FUNCTION: DUAL MONOSTAB MULV1
 TECHNOLOGY: CMOS
 REF. NO. RECORD: 91 2730

 MANUFACTURER: RCA
 PART NUMBER: 4098B
 SPECIFICATION: M38510/175A A1
 DATA SOURCE: RCA

 LDC RAD. TYPE PART QTY. BIAS
 8017 CO-60 25 10V

CUM. DOSE (RADS): 0 100K
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD
 DVNTH V .19 .08
 DVPTH V .28 .29

 REMARKS: LDC IS INSPECTION LOT NO.

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REMARKS:

REMARKS: LDC= METAL EVAPORATION RUN

GENERIC PART NUMBER: 4099

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GENERIC PART NUMBER: 4250
 FUNCTION: PROGRAMMABLE OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 25-33 2700

MANUFACTURER: NSC
 PART NUMBER: LM4250J
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7712 CO-60 5 UNK.

CUM. DOSE (RADS): 0

	12.5K	42.5K	130K	250K
PARAMETERS	MEAN SD	MEAN SD	MEAN SD	MEAN SD
VIO	5PASS	5PASS	5PASS	5PASS
IB	5PASS	5PASS	5PASS	5PASS
IIO	5PASS	5PASS	5PASS	5PASS
IQ	5PASS	5PASS	5PASS	5PASS
GBW	5PASS	5PASS	5PASS	5PASS

REMARKS: *ALL FAILED IIO, IB AT LOW DOSES. GBW ALSO DEGRADED SIGNIFICANTLY.

GENERIC PART NUMBER: 4344
 FUNCTION: PHASE/FREQ DETECTOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1017 5170

MANUFACTURER: MOTOROLA
 PART NUMBER: MC4344L
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 8031 CO-60 5 VCC=5.0V.

CUM. DOSE (RADS): 0

	100K	200K	500K	1MEG
PARAMETERS	MEAN SD	MEAN SD	MEAN SD	MEAN SD
E(PH)*(1) RAD	0.797 0.044	0.797 0.043	0.801 0.045	0.804 0.043
E(PH)*(2) RAD	0.528 0.030	0.535 0.029	0.532 0.031	0.558 0.024
E(PH)*(3) RAD	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0

REMARKS: *E(PH)=PHASE ERR. (1)E-3(PI)/2. (2)E-3(PI). (3)E-3. **CONT. ON REC. 5171

 GENERIC PART NUMBER 4344
 FUNCTION PHASE/FREQ DETECTOR
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD 1017 5171

 MANUFACTURER MOTOROLA
 PART NUMBER MC4344L
 SPECIFICATION DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 100K 200K 500K 1MEG
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 * E(PH)(4) RAD -.217 .249 -.182 .265 -.187 .256 -.142 .252 -.130 .250
 E(PH)(5) RAD -.334 .375 -.322 .389 -.312 .392 -.307 .377 -.256 .374
 I(OLK8) NA 4.62 0.63 3.78 0.41 3.76 0.51 3.55 0.44 3.74 0.45
 I(OLK10) PA 4.56 1.14 5.82 1.05 7.32 1.13 10.52 1.51 12.82 2.72
 I(08) MA 6.128 1.387 3.160 0.351 2.090 0.215 1.084 0.108 0.688 0.075
 VEH V 2.186 0.066 2.195 0.068 2.201 0.069 2.211 0.069 2.215 0.066
 REMARKS: *CONT. FROM REC. 5170. (4)e(PI). (5)e(PI))/2.

GENERIC PART NUMBER 4502
 FUNCTION STROB HEX INV/BUFF
 TECHNOLOGY CMOS
 REF. NO. RECORD 93 2710

MANUFACTURER RCA
 PART NUMBER 4502B
 SPECIFICATION MIL-M-38510/174 A2 RCA

LDC RAD. TYPE PART QTY. BIAS

7840 CO-60 11 10V

CUM. DOSE (RADS): 0 100K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 DVNTH V .45 .03
 DVPTH V .44 .04

REMARKS: LDC= METAL EVAPORATION RUN

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 4508 DUAL 4-BIT LATCH CMOS 25-34 2540

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 RCA CD4508BD

 LDC RAD. TYPE PART QTY. BIAS

 7746 CO-60 5 APPLICATION CIRCUIT

 CUM. DOSE (RADS): 0 10K 40K 130K 250K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 FUNCTIONALITY 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 VOH * 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 VOL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDN 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDP 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDD QUIESCENT 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDD DYNAMIC 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 REMARKS: *II, IL, THL, TLH ALSO PASSED (UP TO 40K). **ALL (VIL THRESH. DEGRADED).

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 4508 DUAL 4 BIT LATCH CMOS 25-35 2550

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 SOLID STATE SCI. CD4508BD

 LDC RAD. TYPE PART QTY. BIAS

 7725 CO-60 5 APPLICATION CIRCUIT

 CUM. DOSE (RADS): 0 2.5K 10K 40K 130K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

 VOH ** 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 VOL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 FUNCTIONALITY 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDP 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDD QUIESCENT 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IDD DYNAMIC 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 REMARKS: *II, THL, TLH, IDN PASS ALL DOSES. *SOME. ***5PASS, BUT SIGNIF. INCREASE

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
451	4 CHANNEL SWITCH	MOS	25-37 2580

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM451H		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7644	CO-60	4	UNK.

CUM. DOSE (RADS): 0 13.5K 59K 113K 329K **

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VGS (TH) *	4PASS		4FAIL		4FAIL		4FAIL		2FAIL	
VO	4PASS		4PASS		4PASS		4PASS		2PASS	
IGBS	4PASS		4PASS		4PASS		4PASS		2PASS	
ID (OFF)	4PASS		4PASS		4PASS		4PASS		2PASS	
IS (OFF)	4PASS		4PASS		4PASS		4PASS		2PASS	
IDD DYNAMIC	4PASS		4PASS		4PASS		4PASS		2PASS	
THL	4PASS		4PASS		4PASS		4PASS		2PASS	

REMARKS: *TLH ALSO PASSED AT ALL DOSES **ONLY 2 DEVICES EXPOSED TO THIS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
451	4-CHANNEL SWITCH	MOS	25-38 2590

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
INTERSIL	MM451HTW		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7643	CO-60	4	UNK.

CUM. DOSE (RADS): 0 2.5K 10K 130K 250K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VGS ***	4PASS		4PASS		4PASS		*FAIL		4FAIL	
VO	4PASS		4PASS		4PASS		*FAIL		4FAIL	
IGBS	4PASS		4PASS		4PASS		4PASS		4PASS	
ID (OFF)	4PASS		4PASS		4PASS		4PASS		4PASS	
IS (OFF)	4PASS		4PASS		4PASS		4PASS		4PASS	
IDD DYNAMIC	4PASS		4PASS		4PASS		4PASS		4PASS	
VO	4PASS		4PASS		4PASS		4PASS		4PASS	

REMARKS: ***THL, TLH PASS ALL DOSES. *(SOME)

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 452 4XSPST SWITCH PMOS 25-39 2600

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 INTERSIL MM452FD AEROJET

 LDC RAD. TYPE PART QTY. BIAS

 7635 CO-60 4 UNK.

 CUM. DOSE (RADS): 0 60K ** 120K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

 VGS(TH) * V 4PASS -7.1 2FAIL -8.5 4FAIL
 VO 4PASS 4PASS
 IGBS 4PASS 4PASS
 ID(OFF) 4PASS 4PASS
 IS(OFF) 4PASS 4PASS

 REMARKS: **ONLY 2 DEVICES TESTED AT 60K. *SPEC. MAX VGS(TH)=-3.0V.

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 452 4XSPST SWITCH PMOS 25-40 2610

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 MM452F AEROJET

 LDC RAD. TYPE PART QTY. BIAS

 7721 CO-60 4 UNK.

 CUM. DOSE (RADS): 0 9.9K 19.8K 30.6K 40.5K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

 VGS(TH) V 1.59 1.78 2.00 2.08 2.23
 VO 4PASS 4PASS 4PASS
 IGBS 4PASS 4PASS 4PASS
 ID(OFF) 4PASS 4PASS 4PASS
 IS(OFF) 4PASS 4PASS 4PASS

 REMARKS: CONTINUED ON RECORD 2611.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
452	4XSPST SWITCH	PMOS	25-40	2611

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM452F		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7721	CO-60	4	UNK.

CUM. DOSE (RADS): 0 80.1K 119.7K 198.9K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
VGS (TH)	2.50		2.69		3.03	
VO	4PASS		4PASS		4PASS	
IGBS	4PASS		4PASS		4PASS	
ID (OFF)	4PASS		4PASS		4PASS	
IS (OFF)	4PASS		4PASS		4PASS	

REMARKS: CONTINUATION FROM RECORD 2610.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
4602	QUAD OP AMP	BIPOLAR	25-41	2680

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	WA1-4602-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
*	CO-60	5	UNK.

CUM. DOSE (RADS): 0 18K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
VIO	5PASS		** 37			
IB	5PASS		5PASS			
IIO	5PASS		5PASS			
IQ	5PASS		5PASS			
GBW	5PASS		***			
FUNCTIONALITY	5PASS		3FAIL			

REMARKS: *4:7816R;1:7823R. **5FAIL(SPECMAX=2.5MV). ***2 FELL FROM 16 TO .327MHZ

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
4741	QUAD OP AMP	BIPOLAR	25-42	2690

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HA1-47412-2		AEROJET

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LDC	RAD. TYPE	PART QTY.	BIAS
7812E	CO-60	5	UNK.

CUM. DOSE(RADS): 0 12.5K 42.5K 130K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	5PASS		5PASS		5PASS		5PASS	
IB	5PASS	*	5PASS	*	5PASS	*	5PASS	*
IIO	5PASS	*	5PASS	*	5PASS	*	5PASS	*
IQ	5PASS		5PASS		5PASS		5PASS	
GBW	5PASS		5PASS		5PASS		5PASS	

REMARKS: * SEVERAL FAILED IIO AND IB AT LOW DOSES AND HAD SIGNIFIC. DBW DEGRAD.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
5001	1K X 1 RAM	CMOS/SOS	1-138	2920

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	MWS5001D		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7622	CO-60	3	VCC=5V.

CUM. DOSE(RADS): 0 300 1K 3K 10K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX)	11		54		220		880	
MARCH	PASS		PASS		PASS		FAIL	
R/W PING PONG	PASS		PASS		PASS		FAIL	

PARAMETERS MEASURED
 @ VCC = 5V
 REMARKS: * MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE).

 GENERIC PART NUMBER: 5001

 FUNCTION: 1K X 1 RAM
 TECHNOLOGY: CMOS/SOS
 REF. NO. RECORD: 1-139 2930

 MANUFACTURER: RCA
 PART NUMBER: MWS5501
 SPECIFICATION: JPL
 DATA SOURCE: JPL

 LDC RAD. TYPE PART QTY. BIAS
 NONE CO-60 4 VCC=10V.

CUM DOSE(RADS): 0 300 1K 3K 7K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 ICC(MAX) * MA 0.115 1.2 4.2 10 15
 MARCH PASS *** PASS FAIL
 GALPAT PASS ** PASS FAIL

PAPAMETERS
 MEASURED
 @ VCC = 10V
 REMARKS: * MEAN = WORST-CASE VALUE (NOT AVG). **NOT MEASURED AT THIS DOSE

 GENERIC PART NUMBER: 504
 FUNCTION: OP-AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1-2 3080

 MANUFACTURER: ANALOG DEVICES, INC.
 PART NUMBER: AD504
 SPECIFICATION: JPL
 DATA SOURCE: JPL

 LDC RAD. TYPE PART QTY. BIAS
 7834L 2.5MEV EL 5 UNK.

CUM DOSE(RADS): 0 30K 75K 150K 600K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 DVOS .0045 .0027 .0025 .0117 .0098 .0233 .0293 .0776
 DIOS .2000 .4338 .8000 1.884 2.100 4.694 7.998 17.25
 DIB 16. 7.187 40. 7.857 66. 17.54 178. 54.55
 +GAIN 136. 5.0 134. 5.209 130.9 2.234 130.2 3.662 123.8 1.407
 -GAIN 142. 5.0 138.1 3.914 137.2 1.979 138.2 6.075 131.8 1.949

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
508	ANALOG SWITCH	CMOS	101-2 3040

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HI-508A		LITTON

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	V+=+15V, V=-15V, PINS 1,2,15,16 TO +5V THRU 10K

CUM.DOSE(RADS):		0		3.9K		8K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LEAK/IN+5V PA	17.00	5.400	22.00	15.00	24.00	20.00		
LEAK/IN-5V PA	13.00	2.400	17.00	18.00	11.00	13.00		
LEAK/O +5V PA	59.00	33.00	41.00	23.00	35.00	40.00		
LEAK/O -5V PA	78.00	71.00	13.00	12.00	43.00	28.00		
R(ON) OHMS	1157.	29.8S	1149.	26.14	1108.	39.00		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
5101	256X4 RAM	CMOS	20 3680

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SSS	SCM5101C-1		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7942	CO-60	3	VCC=5V

CUM.DOSE(RADS):		0		1.5K		3K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTN	1.168	.0443	1.013	.0907	.8518	.1673		
VTP	1.168	.1135	1.231	.1096	1.292	.1059		
ICC	00000	00000	23.93	5.565	555.3	119.0		

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
5101	256X4 RAM	CMOS	19	3690

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MOTOROLA	MCM5101C80		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
8026	CO-60	2	VCC=5V

CUM. DOSE (RADS): 0 1.5K 3K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTN	.5751	.0313	.4387	.0775	.3123	.1358		
VTP	1.068	.1804	1.124	.1803	1.174	.1771		
ICC	.0700	.0141	.5150	.2051	11.65	7.425		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
5211	12-BIT A/D CONVERTER	CMOS	1-134	2900

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MNC	MN5211		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
8102	2.5MEV EL	2	VCC=5V, VDD=12V, VEE=-12V.

CUM. DOSE (RADS): 0 75K 150K 300K 600K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
OFFSET(MAX)MV	2.01		2.16		4.17		10.36		16.86	
OFFERR LSB	0.824		0.887		1.710		1.152		6.90	
NONLIN LSB	0.501		0.542		0.560		0.736		1.352	
IOH(MIN) MA	4.80		4.70		4.68		4.65		4.63	
IOL(MIN) MA	17.69		14.42		13.27		12.17		11.15	

--PARAMETERS CONT. ON REC. 2901.
 REMARKS: MEAN = WORST-CASE PARAMETER VALUE (NOT AVG.), BIAS SAME AS ABOVE.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
5211	12-BIT A/D CONVRTR.	CMOS	1-134 2901

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MNC	MN5211		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I _{IH} (MAX) NA	795		804		793		778	
I _{IL} (MAX) UA	332		322		321		320	
DVREF(MAX) MV	---		3.0		3.5		1.5	
ICC(MAX) MA	21.9		21.5		21.4		21.3	
IDD(MAX) MA	13.95		13.80		13.75		13.80	

--PARAMETERS CONT. ON REC. 2902.
 REMARKS: CONTINUATION FROM RECORD 2900.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
5211	12-BIT A/D CONVRTR.	CMOS	1-134 2902

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MNC	MN5211		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I _{EE} (MAX) MA	8.60		8.50		8.50		8.45	
+FSACC(MIN) V	4.99		4.99		4.99		5.00	
-FSACC(MIN) V	4.99		4.99		4.98		4.96	
VOL(MAX) MV	109		113		115		116	
VOH(MIN) V	4.02		4.03		4.03		4.04	

-- END OF
 PARAMETERS
 REMARKS: CONTINUATION FROM RECORD 2901.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
5214	12-BIT A/D CONVRTR.	CMOS	1-135	2910

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MNC	MN5214		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
8102	2.5MEV EL	2	VCC=5V, VDD=15V, VEE=-15V.

CUM.DOSE(RADS): 0 30K 75K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IIH(MAX) * NA	898		FAIL		FAIL		FAIL	
IIL(MAX) * UA	304		FAIL		FAIL		FAIL	
DVREF(MAX) *	---		FAIL		FAIL		FAIL	
ICC(MAX) * MA	20.4		FAIL		FAIL		FAIL	
IDD(MAX) * MA	17.95		FAIL		FAIL		FAIL	
IEE(MAX) * MA	4.25		FAIL		FAIL		FAIL	
--PARAMETERS CONT. ON REC. 2911.								
REMARKS: * MEAN = WORST-CASE (NOT AVG.) @ VCC=5V, VDD=15V, VEE=-15V.								

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
5216	12-BIT A/D CONVRTR.	CMOS	1-136	2890

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MNC	MN5216		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
**	2.5MEV EL	3	VCC=5V, VDD=15V, VEE=-15V.

CUM.DOSE(RADS): 0 75K 150K 300K 600K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH(MIN) V	3.49		3.50		4.29		4.08		4.07	
VOL(MAX) MV	97.5		103		106		106		109	
IOH(MIN) MA	4.49		4.35		4.72		4.91		4.86	
IOL(MIN) MA	15.24		11.25		9.73		8.19		6.84	
IIH(MAX) UA	0.818		0.805		0.781		0.774		0.737	
IIL(MAX) UA	236		228		228		221		220	
--PARAMETERS CONT. ON REC. 2891.										
REMARKS: **7909(1),7910(2). MEAN = WORST-CASE (NOT A.G.). BIAS SAME AS ABOVE.										

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GENERIC PART NUMBER 5216
FUNCTION 12-BIT A/D CONVRTR.
TECHNOLOGY CMOS
REF. NO. RECORD 1-136 2891

MANUFACTURER MNC
PART NUMBER MN5216
SPECIFICATION
DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
DVREF (MAX) MV	---	---	7.99	---	6.50	---	9.99	---
ICC (MAX) MA	16.45	---	15.95	---	14.56	---	14.25	---
IDD (MAX) MA	12.40	---	12.85	---	19.00	---	19.95	---
IEE (MAX) MA	11.92	---	11.95	---	11.60	---	11.85	---
OFFSET (MAX) MV	2.13	---	13.12	---	FAIL	---	FAIL	---
OFFERR								
(MAX) LSB	0.750		5.25		FAIL		FAIL	

REMARKS: CONTINUATION FROM RECORD 2890. PARAMETERS CONTINUED ON RECORD 2892.

GENERIC PART NUMBER 5216
FUNCTION 12-BIT A/D CONVRTR.
TECHNOLOGY CMOS
REF. NO. RECORD 1-136 2892

MANUFACTURER MNC
PART NUMBER MN5216
SPECIFICATION
DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	75K		150K		300K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AOL OFF (MAX) MV	2.74	---	11.90	---	13.73	---	28.3	---
AOL ERR (MAX) LSB	1.21	---	4.87	---	5.62	---	11.62	---
NONLIN (MAX) LSB	0.919	---	0.721	---	FAIL	---	FAIL	---

*
REMARKS: CONTINUATION FROM RECORD 2891. *END OF PARAMETERS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
532	MULTIPLIER/DIVIDER	BIPOLAR	1044	5460

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD532		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7736M	CO-60	5	V+(PIN2)=+15V; V-(PIN5)=-15V; PINS 7,8,9,10 @ GND*

CUM.DOSE(RADS): 0 100K 300K 500K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VO(1V)	136.4	1.727	135.4	1.557	136.3	1.681	135.1	1.171
VO(2V)	543.5	4.779	541.9	4.669	544.5	4.594	541.3	4.212
VO(3V)	1221.	9.985	1218.	9.783	1223.	9.434	1216.	9.236
VO(4V)	2170.	16.80	2165.	16.88	2174.	16.27	2163.	16.54
VO(5V)	3387.	25.79	3377.	26.06	3391.	25.39	3373.	25.97
IS	2.640	0.055	2.560	0.055	2.560	0.055	2.400	0
VDS	25.86	20.85	30.44	21.41	35.96	21.86	40.08	23.03

REMARKS: *; PINS 1,3,4,6 TO GND VIA 1K.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54C/74	HEX/QUAD D-FLIP-FLO	TTL	24-42	3170

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	54C174	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
32314	CO-60	10	VDD=CLR=D4=D5=D6=CK=5V, REST TIED TO GND

CUM.DOSE(RADS): 0 10K 20K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D ICC	235.4	117.6	2800	349.6				
D VOL	.0367	.0102	1.128	1.239				
D VOH	.0578	.0130	.8973	1.231				

REMARKS: LDC=LOT NO

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54C200	256X4 RAM	CMOS	1-128 2960

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM54C200		JPL

LDC RAD. TYPE: PART QTY. BIAS

NONE CG-50 3 VCC=104.

CUM. DOSE (RADS):		0		300		1K		3K		10K **		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX) * NA	1.2		3.4		12.0		38		84			
MARCH	PASS		PASS		PASS		PASS		PASS			
R/W PING PONG	PASS		PASS		PASS		PASS		PASS			

PARAMETERS
 MEASURED
 @ VCC = 10V

REMARKS: * MEAN = WORST-CASE (NOT AVG). **DOSES CONTINUED ON RECORD 2961.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54C200	256X4 RAM	CMOS	1-128 2961

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM54C200		

LDC RAD. TYPE: PART QTY. BIAS

CUM. DOSE (RADS):		0		20K		30K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX) NA	1.2		125		145			
MARCH	PASS		PASS		PASS			
R/W PING PONG	PASS		PASS		PASS			

REMARKS: DOSES CONTINUED FROM RECORD 2960.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54C906	HFX INVERT BUFFER	CMOS	2	3700

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL SEMI.	MM54C906W		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7843	CO-60	3	VCC1=5V, VCC2=10V

CUM.DOSE(RADS): 0 4K 1K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTN	1.527	.0421	1.342	.0419	FAILE	FAILE		
VTP	-1.82	.0642	-1.89	.0803	-2.00	.1160		
10-V02	0.000	0.000	.0065	.0070	.2317	.2087		
10-V04	0.000	0.000	.0055	.0062	0.222	.2011		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54C920	255X4 RAIL	CMOS	1-130	2980

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM54C920		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
MLO,	CO-60	3	VCC=5V.

CUM.DOSE(RADS): 0 300 1.0K 3.0K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX) * UA	.0072		.0091		132		5900	
MARCH	PASS		PASS		PASS		FAIL	
R/W PING PONG	PASS		PASS		PASS		FAIL	

REMARKS: * MEAN = WORST-CASE PARAMETER VALUE (NOT AVG.) • VCC=5V.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54C929	1KX1 RAM	CMOS	1-131 2970

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM54C929		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	4	VCC=5V.

CUM. DOSE (RADS):		0		300		1K		3K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC(MAX) * UA	0.056		0.056		26		7500			
MARCH	PASS		**		**		FAIL			
GALPAT	PASS		**		**		FAIL			

REMARKS: * MEAN=WORST-CASE (NOT AVG.) @VCC=5V. **NOT MEASURED @ TP1'S DOSE

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54C929	1Q24X1 RAM	CMOS	1-132 2990

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	MM54C929		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	CO-60	4	V+ = 15V.

CUM. DOSE (RADS):		0		.3K		1.0K		3.0K		7.0K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC (MAX) UA	2.5		3		5		25		4800			
MARCH	PASS		*		*		*		FAIL			
GALPAT	PASS		*		*		*		FAIL			

REMARKS: MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE). *NOT MEASURED.

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 GENERIC PART NUMBER 54C929
 FUNCTION RAM
 TECHNOLOGY CMOS
 REF. NO. RECORD 701-5 3180

 MANUFACTURER NATIONAL
 PART NUMBER MM54C929D
 SPECIFICATION AFWL-TR-79-118
 DATA SOURCE

 LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 10 VCC=+5V, 5 W/INPUTS TIED TO VCC, 5 W/INPUTS @ GND

 CUM. DOSE (RADS): 0 500 1.5K
 PARAMETERS
 MEAN SD MEAN SD MEAN SD MEAN SD
 ICC2 MA .0760 .9760 .5650
 IOL MA 8.850 9.070 9.160
 IOH MA 6.920 6.760 6.710
 TAC NS 136.0 132.0 108.0

REMARKS:

 GENERIC PART NUMBER 54LS00
 FUNCTION GATE
 TECHNOLOGY LSTTL
 REF. NO. RECORD 501-2 3190

 MANUFACTURER TI
 PART NUMBER 54LS00
 SPECIFICATION MARTIN-MARIETTA
 DATA SOURCE

 LDC RAD. TYPE PART QTY. BIAS
 7826 CO-60 6 UNK.

 CUM. DOSE (RADS): 0 50K 100K 500K 1MEG
 PARAMETERS
 MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 TPLH 3.083 .4082 2.833 .3510 2.646 .3753 2.979 .3120 3.104 .3290
 TPHL 5.083 .5036 5.292 .4872 5.438 .5174 5.563 .5578 5.646 .5209

REMARKS: PRE-RAD DATA IS POST LINAC DATA

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54LS00	GATE	TTC	10	3260

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS00		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	1	VCC=5V, PINS 12,13 AT 3.4V.

CUM.DOSE(RADS): 0

PARAMETERS	MEAN	SD	100K		650K		2.7MEG	
			MEAN	SD	MEAN	SD	MEAN	SD
IIL *	172.9	.9192	171.8	1.061	170.2	.4950	171.0	0.0
IIH **	.15	.00	.14	.06	.15	.00	.07	.00
ICCH	756		750		742		700	
ICCL	2.83		2.80		2.78		2.70	
VOL	295.8	2.217	295.8	2.217	302.5	2.082	301.8	2.217
V0H	3.058	.0029	3.060	0.000	3.050	0.000	3.020	0.000

REMARKS: *AVG. OF IILA & IILB. **AVG. OF IIHA & IIHB.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54LS00	QUAD NAND GATE	TTL	10	3270

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS00		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	1	VCC=5V, PINS 12,13 AT 3.4V

CUM.DOSE(RADS): 0

PARAMETERS	MEAN	SD	300K		2MEG	
			MEAN	SD	MEAN	SD
IIL	207.5	.7071	205.8	.3536	202.5	.7071
IIH	.20	.00	.20	.00	.075	.0354
VOL	269.3	6.397	274.0	6.055	281.0	7.071
V0H	3.069	.0025	3.060	0.000	3.030	0.000
ICCH	911.0	0.0	904.0	0.0	900.0	0.0
ICCL	3.33	0.00	3.29	0.00	3.20	0.00

REMARKS:

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 GENERIC PART NUMBER: 54LS00

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS00	QUAD 2 INPUT NAND	LSTTL	25-53	3430

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS00J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
*	CO-60	6	5V SUPPLY, TYPICAL-USE CIRCUIT

CUM. DOSE (RADS): 0 13.5K 58.5K 112.5K 328.5K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{IK}	GPASS		GPASS		GPASS		GPASS	
V _{OH}	GPASS		GPASS		GPASS		GPASS	
V _{OL}	GPASS		GPASS		GPASS		GPASS	
I _I	GPASS		GPASS		GPASS		GPASS	
I _{IH}	GPASS		GPASS		GPASS		GPASS	
I _{IL}	GPASS		GPASS		GPASS		GPASS	
I _{OS}	GPASS		GPASS		GPASS		GPASS	

REMARKS: *3 PARTS 7716; 3 7710. **ICCH AND ICCL ALSO PASSED AT ALL DOSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS00	QUAD 2 INPUT NAND	LSTTL	25-54	3440

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS00J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7629	CO-60	5	UNK.

CUM. DOSE (RADS): 0 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{IK} **	5PASS		5PASS		5PASS		5PASS	
V _{OH}	5PASS		5PASS		5PASS		5PASS	
V _{OL}	5PASS		5PASS		5PASS		5PASS	
I _I	5PASS		5PASS		5PASS		5PASS	
I _{IL}	5PASS		5PASS		5PASS		5PASS	
I _{OS}	NS	* 29	1	* 29	1	* 29	1	
	MA	*44.0	0.2	*14.0	0.2	*14.0	0.2	

REMARKS: **ICCH, ICCL, I_{IH}, I_{IL} PASSED. *5FAIL

 GENERIC PART NUMBER: 54LS00

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS00	QUAD 2-INPUT NAND	TTL	1101	5B10
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
I	SN54LS00J		MARTIN	

LDC	RAD. TYPE	PART QTY.	BIAS
7836	CO-60**	6	VCC=+5V.

CUM. DOSE (RADS) :		0		50K		100K		500K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY		6PASS		6PASS		6PASS		6PASS		6PASS	
TPHL *	NS	3.083	.3997	2.833	.3436	2.771	.7635	2.979	.3055	3.104	.3221
TPHL **	NS	5.083	.4930	5.292	.4769	5.438	.5065	5.563	.5461	5.646	.5099

BOTH MEAS.
@ VENABLE
= 1.3V.

REMARKS: **AND LINAC. SPECS: TYP(*)=9NS; TYP(**)=10NS; MAX(&****)=15NS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS02	QUAD 2-INPUT NOR	TTL	73	3720
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
SIGNETICS	SN54LS02	909958	HUGHES	

LDC	RAD. TYPE	PART QTY.	BIAS					
UNK.	CO-60	5	VCC=5.5V					
CUM.DOSE(RADS):								
		0	3MEG			6MEG		
PARAMETERS			MEAN	SD	MEAN	SD	MEAN	SD
ILL	UA	108.4	6.580	145.4	2.608	142.8	2.950	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS03	QUAD 2 INPUT NAND	LSTTL	25-55	3450

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS03J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7607	CO-60	5	5V SUPPLY, TYPICAL-APPLICATION CIRCUIT

CUM. DOSE (RADS):	0		13.5K		58.5K		112.5K		328.5K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
VIK *	SPASS		SPASS		SPASS		SPASS		SPASS	
VOH	SPASS		SPASS		SPASS		SPASS		SPASS	
VOL	SPASS		SPASS		SPASS		SPASS		SPASS	
II	SPASS		SPASS		SPASS		SPASS		SPASS	
IIH	SPASS		SPASS		SPASS		SPASS		SPASS	
IIIL	SPASS		SPASS		SPASS		SPASS		SPASS	
ICCH	SPASS		SPASS		SPASS		SPASS		SPASS	

REMARKS: *ICCL WAS ALSO MEASURED AND WITHIN SPEC AT ALL DOSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54LS03	QUAD 2 INPUT NAND	LSTTL	25-56 3460

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS03J		AEROJET

LDC	RAD.	TYPE	PART QTY.	BIAS
7627	CO-60	5	UNK.	

CUM. DOSE (RADS):	0		310K							
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
VTK *	5PASS		5PASS							
VOH	5PASS		5PASS							
VOL	5PASS		5PASS							
II	5PASS		5PASS							
IIH	5PASS		5PASS							
IIIL	5PASS		5PASS							
ICCH	5PASS		5PASS							

REMARKS: *ICCL WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

GENERIC PART NUMBER: 54LS03

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
54LS04	HEX INVERTER	LSTTL	25-57 3470

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS04J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
*	CO-60	5	+5V SUPPLY, TYPICAL-APPLICATION CIRCUIT

CUM.DOSE(RADS): 0 13.5K 58.5K 113K 330K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK **	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: *3 PARTS 7710; 2 PARTS 7724. **ICCH AND ICCL ALSO PASSED ALL DOSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
54LS04	HEX INVERTER	LSTTL	25-58 3480

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS04J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7635	CO-60	5	UNK.

CUM.DOSE(RADS): 0 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
TLK	NS ** 29	1	** 29	1				

REMARKS: *ICCH, ICCL, THL, IOS PASSED. **5FAIL. ***MAX DVOL=35%.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS04	NAND GATE/INVERTER	LSTTL	77	3760

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	SN54LS04	911904	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VCC=5.5V, ALL OUTPUTS LOW

CUM. DOSE (RADS): 0

PARAMETERS	MEAN		SD		1MEG		3MEG		6MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICCL MA	4.620		4.380		4.280		4.100			
VOL V	.3051		.3280		.3200		.3240			
VOL V	3.074		3.054		3.056		3.057			
VIL V	1.000		1.000		1.013		1.013			
VIH V	1.185		1.230		1.360		1.325			
IIL UA	142.0		158.5		158.0		148.0			
IOL UA	28.30		27.95		28.10		27.85			

REMARKS: *PARAMETERS CONTINUED ON RECORD 3761.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS04	NAND GATE/INVERTER	LSTTL	77	3761

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	SN54LS04		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	MEAN		SD		60K		1MEG		3MEG		6MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TPHL *	NS	11.0	2.0		12.8	1.0	12.6	3.0	13.0	2.0	13.9	1.0
TPLH *	NS	11.2	1.0		11.0	0.0	12.0	3.0	12.0	0.0	12.0	0.0

REMARKS: PARAMETERS CONTINUED FROM RECORD 3760. SD=RANGE OF VALUES (NOT S.D.).

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS05	HEX INVERTER	LSTTL	25-59	3490

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS05J		AEROJET

LDC RAD. TYPE PART QTY. BIAS

7705 CO-60 5 +V SUPPLY TYPICAL-APPLICATION CIRCUIT

CUM. DOSE (RADS): 0 45K 99K 315K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
ICCH	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCL ALSO PASSED AT ALL DOSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS05	HEX INVERTER	LSTTL	25-60	3500

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	54LS05J		AEROJET

LDC RAD. TYPE PART QTY. BIAS

7405 CO-60 5 UNK.

CUM. DOSE (RADS): 0 310K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
ICCH	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCL WAS ALSO MEASURED AND MET SPEC AT ALL DOSES.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS08	QUAD 2 INPUT AND	LSTTL	25-62	3510

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS08J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7520	CO-60	5	UNK.

CUM. DOSE (RADS): 0 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCH, ICCL, THL, TLH ALSO PASSED.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS10	TRIPLE 3 INPUT NAND	LSTTL	25-63	3520

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS10JA		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7626	CO-60	5	UNK.

CUM. DOSE (RADS): 0 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCH, ICCL, THL, TLH WERE ALSO MEASURED AND MET SPEC AT ALL DOSES.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54LS109	DUAL JK FF	LSTTL	25-75	3630

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS109J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7702	CO-60	5	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	10K		40K		130K		250K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY	5PASS		5PASS		5PASS		5PASS	
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
ICC QUIESCENT	5PASS		5PASS		5PASS		5PASS	
ICC DYNAMIC	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: *IOS,II,IH,IIL,THL,TLH PASS ALL DOSES. **2 PARTS FAILED TOGGLE TEST.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54LS138	3 TO 8 LINE DEMUX	LSTTL	25-76	3340

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS138J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7644	CO-60	5	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	13.5K		58.5K		112.5K		328.5K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIH *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: * ICC WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS138	3 TO 8 LINE DEMUX	LSTTL	25-77	3350

MANUFACTURE#	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS138J		AEROJET

LDLC	RAD. TYPE	PART QTY.	BIAS
7530	CO-60	5	UNK.

CUM. DOSE (RADS) :	0		19K		56K		140K		250K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
VIK *	5PASS		5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS		5PASS	
IIIL	5PASS		5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICC ALSO MEASURED; 1 DEV ABOVE SPEC BY 1MA BEFORE AND AFTER IRRAD.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
541S158	QUAD 2 TO 1 MUX	LSTTL	25-78	3360

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS158U		AEROJET

LDLC	RAD. TYPE	PART QTY.	BIAS
7749	CO-60	5	+5V. OPERATING CIRCUIT

PARAMETERS	0		13.5K		58.5K		112.5K		329K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS		5PASS	
IIIL	5PASS		5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICC WAS ALSO MEASURED AND WAS WITHIN SPEC AT ALL DOSES.

 GENERIC PART NUMBER: 54LS161

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS161	4 BIT BINARY COUNT	LSTTL	25-79	3240

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS161J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7724	CO-60	5	+5V, OPERATING CIRCUIT, 500-KHZ SQUARE-WAVE CLOCK

CUM. DOSE(RADS): 0 13.5K 59K 113K 329K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS		5PASS	
VO	5PASS		5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCH AND ICCL ALSO PASSED AT ALL DOSES

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS161	4 BIT BINARY COUNT	LSTTL	25-80	3250

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS161J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7711	CO-60	5	UNK.

CUM. DOSE(RADS): 0 19K 56K 140K 250K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS		5PASS	
VO	5PASS		5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS		5PASS	
ICCH	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCL ALSO PASSED ALL DOSES.

 GENERIC PART NUMBER: 54LS161

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 GENERIC PART NUMBER: 54LS174

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS174	HEX D FLIPFLOP	LSTTL	25-81	3640

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS174J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7636	CO-60	5	UNK.

CUM. DOSE (RADS): 0 56K 140K 450K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{IK} *	5PASS		5PASS		5PASS		5PASS	
V _{OH}	5PASS		5PASS		5PASS		5PASS	
V _{OL}	5PASS		5PASS		5PASS		5PASS	
I _I	5PASS		5PASS		5PASS		5PASS	
I _{IH}	5PASS		5PASS		5PASS		5PASS	
I _{IL}	5PASS		5PASS		5PASS		5PASS	
I _{CC}	5PASS		5PASS		5PASS		5PASS	

REMARKS: *IOS ALSO MEASURED; MOST ABOVE SPEC BEFORE IRRAD, UNAFFECTED BY IRRAD.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS175	QUAD D FLIP FLOP	LSTTL	25-82	3650

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DM54LS175J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7722	CO-60	5	UNK.

CUM. DOSE (RADS): 0 13K 58K 112K 326K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{IK} *	5PASS		5PASS		5PASS		5PASS	
V _{OH}	5PASS		5PASS		5PASS		5PASS	
V _{OL}	5PASS		5PASS		5PASS		5PASS	
I _I	5PASS		5PASS		5PASS		5PASS	
I _{IH}	5PASS		5PASS		5PASS		5PASS	
I _{IL}	5PASS		5PASS		5PASS		5PASS	
I _{OS}	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCL WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

 GENERIC PART NUMBER: 54LS175

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

54LS175 QUAD D FLIPFLOP LSTTL 25-83 3660

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

TI SN54LS175J AEROJET

LDC RAD. TYPE PART QTY. BIAS

7637 CO-60 5 UNK.

CUM. DOSE (RADS): 0 56K 140K 450K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
VIK * 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
VOH 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
VOL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
II 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
IIH 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
IIL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
IOS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
REMARKS: *ICCL WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

54LS20 NAND GATE/INVERTER LSTTL 78 3750

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

NATIONAL SN54LS20 911933 HUGHES

LDC RAD. TYPE PART QTY. BIAS

UNK. CO-60 5 VCC=5.5V, ALL OUTPUTS LOW

CUM. DOSE (RADS): 0 1MEG 3MEG 6MEG
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
VOH V 3.100 3.100 3.100 3.095
VOL V .2800 .2890 .2910
VIH V 1.195 1.185 1.197
VIL V .9650 .9550 .9620
ICCL MA 1.635 1.590 1.579 1.565
IOS MA 80.00 78.00 76.50
ILL UA 195.5 193.0 191.5
REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS21	DUAL 4 INPUT AND	LSTTL	25-67	3530

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS21J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7429	CO-60	5	UNK.

CUM. DOSE (RADS): 0 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
Vik *	5PASS		5PASS		5PASS		5PASS	
Voh	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCH, ICCL, THL, TLH WERE ALSO MEASURED AND MET SPEC AT ALL DOSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS244	OCTAL BUFFER/DRIVER	TTL	1062	5640

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS244		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7836	CO-60 + N*	10	VCC=+5V.

CUM. DOSE (RADS): 0 *N*200K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL3	MV	232.5	8.22	236.4	9.23			
VOL5	MV	229.2	7.57	233.2	8.44			
VOL7	MV	228.8	8.13	232.1	9.02			
VOL9	MV	224.4	18.04	229.3	18.67			
VOL12	MV	235.5	7.20	238.7	7.65			
VOL14	MV	229.9	6.64	233.8	7.27			

REMARKS: *NEUTRON RAD. = 6.28E11 N/SQCM. **CONTINUED ON RECORD 5641.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
54LS244	OCTAL BUFFER/DRIVER	TTL	1062 5641
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS244		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS):		O		N+200K	
PARAMETERS		MEAN	SD	MEAN	SD
VOL16	MV	239.2	14.51	238.4	7.86
VOL18	MV	234.6	6.45	238.2	6.63

REMARKS: CONTINUATION OF RECORD 5640.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
54LS244	OCTAL BUFFER/DRIVER	TTL	1071 5730
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS244		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
**	CO-60 + N*	10	VCC=+5V.

CUM.DOSE(RADS):		O		*N+100K		*N+300K		*N+500K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TI ***	PA	3291.	9100.	5548.	10718	5704.	10279	7277.	11859
IOZH ***	NA	350.1	708.4	353.7	708.5	313.8	721.0	356.3	708.7
IOZL ***	NA	80.49	188.8	81.30	189.0	78.35	189.0	78.80	139.0
VOH ***	MV	2527.	91.71	2532.	92.47	2539.	92.43	2602.	92.43
VOL ***	MV	324.0	26.75	322.3	27.90	323.9	28.04	324.0	27.86
IOS ***	MA	76.93	8.820	78.37	9.039	78.82	8.983	78.72	9.401

REMARKS: **7714.7806,7923. *NEUTRON RAD.=6.E11 N/SQCM. ***AVERAGE OVER 8 PINS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS266	QUAD 2-INPUT X-NOR	LSTTL	25-84	3570

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS266J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7421	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	56K		140K		450K	
	MEAN	SD	MEAN	SD	MEAN	SD
VTK	5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS	
IOH	5PASS		5PASS		5PASS	
ICC	5PASS		5PASS		5PASS	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS27	TRIPLE 3 INPUT NOR	LSTTL	25-68	3540

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS27J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7637	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	56K		140K		450K	
	MEAN	SD	MEAN	SD	MEAN	SD
VTK *	5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS	

REMARKS: *ICCH AND ICCL WERE ALSO MEASURED AND MET SPEC AT ALL DOSES.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS279	QUAD SR LATCH	LSTTL	25-85	3290

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS279J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7752	CO-60	5	+5V OPERATING CIRCUIT

CUM. DOSE (RADS): 0 13.5K 58.5K 112.5K 329K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: * ICC WAS ALSO MEASURED AND WAS WITHIN SPEC AT ALL DOSES.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS30	8 INPUT NAND	LSTTL	25-69	3550

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS30J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7408	CO-60	5	UNK.

CUM. DOSE (RADS): 0 350K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: * ICCH, ICCL, THL, TLH WERE ALSO MEASURED AND MET SPEC AT ALL DOSES

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54LS324	VCO	LSTTL	25-86 3300

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS324J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7612	CO-60	5	UNK.

CUM. DOSE (RADS): 0

	19K	56K	140K	250K
PARAMETERS	MEAN	SD	MEAN	SD
VIK *	5PASS	5PASS	5PASS	5PASS
VOH	5PASS	5PASS	5PASS	5PASS
VOL	5PASS	5PASS	5PASS	5PASS
II	5PASS	5PASS	5PASS	5PASS
IIH	5PASS	5PASS	5PASS	5PASS
IIL	5PASS	5PASS	5PASS	5PASS
IOS	5PASS	5PASS	5PASS	5PASS

REMARKS: *ICC WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54LS37	QUAD 2-INPUT NAND	LSTTL	25-71 3560

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS37J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7720	CO-60	5	UNK.

CUM. DOSE (RADS): 0

	56K	140K	450K
PARAMETERS	MEAN	SD	MEAN
VIK *	5PASS	5PASS	5PASS
VOH	5PASS	5PASS	5PASS
VOL	5PASS	5PASS	5PASS
II	5PASS	5PASS	5PASS
IIH	5PASS	5PASS	5PASS
IIL	5PASS	5PASS	5PASS
IOS	5PASS	5PASS	5PASS

REMARKS: *ICCH, ICCL WERE ALSO MEASURED AND MET SPEC AT ALL DOSES

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
54LS393	DUAL 4BIT COUNTER	LSTTL	25-87 3310
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FSC	54LS393J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7735	CO-60	5	UNK.

CUM. DOSE(RADS):	0		19K		56K		140K		250K	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICC WAS ALSO MEASURED AND MET SPEC AT ALL DOSES.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
54LS395	4-BIT SHIFT REGISTR	TTL	1063 5650

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS395A		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8004	CO-60 + N*	10	VCC=+5.OV.

CUM. DOSE(RADS):		0		*N+200K									
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL12		MV	312.9	11.68		310.9	5.646						
VOL13		MV	308.7	4.322		311.0	4.761						
VOL14		MV	310.3	5.417		313.4	5.400						
VOL15		MV	312.8	4.541		315.5	4.378						
VOL11		MV	274.2	5.266		279.5	5.339						

REMARKS: *NEUTRON RAD. = 7.06E11 N/SQCM.

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MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	54LS74		MARTIN-MARIETTA

CUM DOSE (RADS) :		0		50K		100K		500K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
NS	TPPLH	10.25	.4523	10.13	.3108	10.21	.3343	10.58	.5573	10.21	.4502
NS	TPHL	10.92	.2887	10.88	.2361	10.92	.1946	11.04	.3343	11.25	.3371

REMARKS: PRE-RAD DATA IS POST LINAC DATA

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LS74AJ		MARTIN

CUM. DOSE (RADS):		0		50K		100K		500K		1MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY	6PASS										
TPPLH *	NS	10.25	.4330	10.13	.2976	10.21	.3200	10.58	.5336	10.21	.4310
TPPLH ***	NS	10.92	.2764	10.86	.2165	10.92	.1863	11.04	.3200	11.25	.3227

BOTH MEAS.
@ VENABLE
= 1.3V.

REMARKS: **AND LINAC. *SPEC: TYP=13NS, MAX=25NS. ***SPEC: TYP=25NS, MAX=40NS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS85	4 BIT COMPARATOR	LSTTL	25-73	3230
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
TI	SNS4LS85J		AEROJET	

LDC	RAD. TYPE	PART QTY.	BIAS
7629	CO-60	5	+5V, WORST-CASE CIRCUIT

CUM. DOSE (RADS) :	0		2.5K		10.0K		40K		130K *	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
V0H	5PASS		5PASS		5PASS		5PASS		5PASS	
V0L	5PASS		5PASS		5PASS		5PASS		5PASS	
I1	5PASS		5PASS		5PASS		5PASS		5PASS	
I1H	5PASS		5PASS		5PASS		5PASS		5PASS	
I1L	5PASS		5PASS		5PASS		5PASS		5PASS	
I0S	5PASS		5PASS		5PASS		5PASS		5PASS	
I0C	5PASS		5PASS		5PASS		5PASS		5PASS	

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
541S86	QUAD EXCLUSIVE-OR	TTL	74	3740

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	54LS86	911932	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VCC=5.5V, RL=2K

CUM. DOSE (RADS):		0		1MEG		6MEG	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD
TIL	UA	486.2	6.620	461.3	4.972	443.3	4.038

REMARKS:

 GENERIC PART NUMBER: 54LS95

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS95	4BIT PARALLEL SHIFT	LSTTL	75	3710

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	SN54LS95B	912906	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VCC=+5V

CUM.DOSE(RADS):		O		1M		3M		6M		15M		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{IH}	1.601		1.577		1.594		1.586		1.574			
V _{IL}	1.563		1.546		1.552		1.554		1.544			
V _{OH}	3.058		3.042		3.030		3.030		3.037			
V _{OL}	.2150		.2236		.2318		.2368		.2387			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LS95	4-BIT PARALLEL SHIF	LSTTL	75	3780

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	SN54LS95B	912906	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VCC=+5V

CUM.DOSE(RADS):		O		1MEG		3MEG		6MEG		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{IH}	1.096		1.084		1.076		1.080			
V _{IL}	1.058		1.048		1.052		1.038			
V _{OH}	3.005		3.004		2.978		2.988			
V _{OL}	.2748		.2848		.2884		.2904			

REMARKS:

 GENERIC PART NUMBER: 54LS95

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54LS95	48BIT PARALLEL SHIFT	LSTTL	75	3790

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TEXAS INS	SN54LS95B	912906	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60		VCC=+5V

CUM.DOSE(RADS): 0

PARAMETERS	1MEG		3MEG		6MEG		15MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTH	1.187		1.202		1.204		1.205	
VIL	1.157		1.186		1.188		1.194	
VOH	2.991		2.962		2.938		2.961	
VOL	.2637		.2610		.2748		.2762	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
54LOO	GATE	TTL	501-3	3200

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	54LOO		MARTIN MARRIETT

LDC	RAD. TYPE	PART QTY.	BIAS
7726	CO-60	6	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	50K		100K		500K	
	MEAN	SD	MEAN	SD	MEAN	SD
TPLH	36.63	4.189	33.29	4.175	34.79	4.374
TPLH	51.33	9.407	49.25	9.166	50.71	8.854

REMARKS: PRE-RAD DATA IS POST LINAC DATA

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 GENERIC PART NUMBER: 54L00
 FUNCTION: QUAD 2 INPUT NAND
 TECHNOLOGY: TTL
 REF. NO.: 25-44
 RECORD: 3380

 MANUFACTURER: TI
 PART NUMBER: SN54LOOJ
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7620 CO-60 4 5VDC

CUM. DOSE (RADS): 0 50K 160K 350K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VOH * 4PASS 4PASS 4PASS 4PASS
 VOL 4PASS 4PASS 4PASS 4PASS
 II 4PASS 4PASS 4PASS 4PASS
 IIH 4PASS 4PASS 4PASS 4PASS
 IIL 4PASS 4PASS 4PASS 4PASS
 IOS 4PASS 4PASS 4PASS 4PASS
 ICCH 4PASS 4PASS 4PASS 4PASS
 REMARKS: *ICCL PASSED. **1FAIL: 18UA (SPEC=10UA). ***2FAIL: 26UA, 27UA.

 GENERIC PART NUMBER: 54L00
 FUNCTION: QUAD 2-INPUT NAND
 TECHNOLOGY: TTL
 REF. NO.: 1102
 RECORD: 5820

 MANUFACTURER: TI
 PART NUMBER: SN54LOOT
 SPECIFICATION: MARTIN
 DATA SOURCE: MARTIN

LDC RAD. TYPE PART QTY. BIAS
 7726 CO-60** 6 VCC=+5V.

CUM. DOSE (RADS): 0 50K 100K 500K 1MEG
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 FUNCTIONALITY 6PASS 6PASS 6PASS 6PASS 6PASS
 TPLH * NS 36.63 4.101 33.46 4.062 32.04 7.802 34.79 4.282 34.63 7.005
 TPLH *** NS 51.33 9.209 45.50 14.86 50.71 8.667 53.29 8.843 54.58 9.046
 BOTH MEAS.
 @ VENABLE
 =1.3V.

REMARKS: **AND LINAC. SPECS: TYP(*)=35NS; TYP(**)=31NS; MAX(*&***)=60NS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LO2	QUAD 2-INPUT NOR	TTL	72	3730

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	SN54LO2	909943	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VCC=5.5V

CUM. DOSE (RADS): 0

PARAMETERS	1MEG		3MEG		6MEG	
	MEAN	SD	MEAN	SD	MEAN	SD
IIH1	1358	.0255	1.394	1.014	5.030	2.051
IIH2	.1125	.0189	.4500	.1710	.7335	.1304
IIL	112.6	2.395	112.0	2.139	111.8	2.149
					111.4	2.183

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54LO3	QUAD 2 INPUT NAND	TTL	25-45	3390

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54LO3J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7701	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	56K		140K		450K	
	MEAN	SD	MEAN	SD	MEAN	SD
IOH	5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS	
ICCH	5PASS		5PASS		5PASS	
ICCL	5PASS		5PASS		5PASS	

REMARKS:

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GENERIC PART NUMBER: 54L04

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 GENERIC PART NUMBER 54L04
 FUNCTION HEX INVERTER
 TECHNOLOGY TTL
 REF. NO. RECORD 25-46 3400

 MANUFACTURER TI
 PART NUMBER SN54L04J
 SPECIFICATION
 DATA SOURCE AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7646 CO-60 5 UNK.

CUM. DOSE (RADS): 0 310K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIK * 5PASS 5PASS
 VOH 5PASS 5PASS
 VOL 5PASS 5PASS
 II 5PASS 5PASS
 IIH 5PASS 5PASS
 IIL 5PASS 5PASS
 IOS 5PASS 5PASS

REMARKS: *ICCH, ICCL, THL, TLH WERE ALSO MEASURED AND MET SPEC AT ALL DOSES

 GENERIC PART NUMBER 54L10
 FUNCTION TRIPLE 3 INPUT NAND
 TECHNOLOGY TTL
 REF. NO. RECORD 25-47 3410

 MANUFACTURER TI
 PART NUMBER SN54L10J
 SPECIFICATION
 DATA SOURCE AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7603 CO-60 5 UNK.

CUM. DOSE (RADS): 0 56K 140K 450K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIK * 5PASS 5PASS 5PASS 5PASS
 VOH 5PASS 5PASS 5PASS 5PASS
 VOL 5PASS 5PASS 5PASS 5PASS
 II 5PASS 5PASS 5PASS 5PASS
 IIH 5PASS 5PASS 5PASS 5PASS
 IIL 5PASS 5PASS 5PASS 5PASS
 IOS 5PASS 5PASS 5PASS 5PASS
 ICCH 5PASS 5PASS 5PASS 5PASS

REMARKS: *ICCL WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

 GENERIC PART NUMBER: 54L10

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54L20	DUAL 4 INPUT NAND	TTL	25-48	3420

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
TI	SN54L20J		AEROJET	

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LDC	RAD. TYPE	PART QTY.	BIAS
7627	CO-60	5	UNK.

CUM. DOSE (RADS): 0 310K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH *	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOL	5PASS		5PASS		5PASS		5PASS	
IOH	5PASS		5PASS		5PASS		5PASS	
ICC	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICCL ALSO PASSED. **3 UNITS: (PRE). 1<IIH<.3UA; (POST)3<IIH<.8UA; SPEC=10U

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54L72	JK MASTER SLAVE FF	TTL	25-49	3590

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
JSC	DM54L72J		AEROJET	

LDC	RAD. TYPE	PART QTY.	BIAS
7615	CO-60	5	+5V APPLICATION CIRCUIT

CUM. DOSE (RADS): 0 12.75K 42.50K 97.75K 301.75K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOL	5PASS		5PASS		5PASS		5PASS	
IOH	5PASS		5PASS		5PASS		5PASS	
ICC	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ADDITIONAL PARAMETRIC FAILURES AS CUM DOSE INCREASED.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54L72	JK MASTER SLAVE FF	TTL	25-49	3600

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DN54L72J		AEROJET

LDLC	RAD. TYPE	PART QTY.	BIAS
***	CO-60	5	+5V APPLICATION CIRCUIT

CUM. DOSE (RADS) :		0		12.75K		51.00K		112.2K		353.4K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH		5PASS		5PASS		5PASS		5PASS		5PASS	
VOL		5PASS		5PASS		5PASS		5PASS		5PASS	
II		5PASS		5PASS		5PASS		5PASS		5PASS	
IIIH		5PASS		5PASS		5PASS		5FAIL		5FAIL	
IIIL		5PASS		5PASS		5PASS		5PASS		5PASS	
IIO5		5PASS		5PASS		5PASS		5PASS		5PASS	
IIC		5PASS		5PASS		5PASS		5PASS		5PASS	

REMARKS: ** 3 PARTS 7921, 2 PARTS 7748.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54L74	DUAL-D-FF	TTL	501-5	3000

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	54L74		MARTIN-MARIETTA

LDC	RAD.	TYPE	PART	QTY.	BIAS
7730	CO-60		6		UNK.

CUM. DOSE (RADS) :		0			50K			100K			500K			1M		
PARAMETERS		MEAN	SD		MEAN	SD		MEAN	SD		MEAN	SD		MEAN	SD	
NS	TPHL	66.50	4.338		68.08	3.397		69.00	3.593		73.00	3.742		74.08	3.423	
NS	TPHL	94.92	8.361		101.4	9.268		104.6	9.219		110.5	11.01		113.3	11.67	

REMARKS: PRE-RAD DATA IS POST LINAC DATA.

 GENERIC PART NUMBER: 54L74
 FUNCTION: DUAL D FLIP FLOP
 TECHNOLOGY: TTL
 REF. NO. RECORD: 25-51 3620
 MANUFACTURER: TI
 PART NUMBER: SN54L74J
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

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LDC RAD. TYPE PART QTY. BIAS
 7630 CO-60 5 UNK.
 CUM. DOSE (RADS): 0 56K 140K 450K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VOH 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 VOL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 II 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IIH 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IIL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 ICC 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS

REMARKS:

 GENERIC PART NUMBER: 54L74
 FUNCTION: DUAL D FLIP-FLOP
 TECHNOLOGY: TTL
 REF. NO. RECORD: 1104 5840
 MANUFACTURER: TI
 PART NUMBER: SN54L74T
 SPECIFICATION: MARTIN
 DATA SOURCE: MARTIN

LDC RAD. TYPE PART QTY. BIAS
 7730 CO-60** 6 VCC=+5V.
 CUM. DOSE (RADS): 0 50K 100K 500K 1MEG
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 FUNCTIONALITY 6PASS 6PASS 6PASS 6PASS
 TPLH * 66.5 4.153 68.1 3.252 69.0 3.440 73.0 3.582 74.08 3.278
 TPLH *** 94.9 8.005 101.4 8.874 104.6 8.827 110.5 10.54 113.3 11.17
 BOTH MEAS.
 @ VENABLE
 = 1.3V.

REMARKS: **AND LINAC. SPEC: TYP=65NS, *MAX=100NS, **MAX=150NS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54L93	4 BIT BINARY COUNT	TTL	25-52	3220

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54L93J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7618	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	19K		56K		140K		250K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IOL	5PASS		5PASS		5PASS		5PASS	
ICL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54S140	DUAL 4 INPUT NAND	STTL	25-90	3320

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54S140J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7727	CO-60	5	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	56K		140K		450K	
	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS	
IOL	5PASS		5PASS		5PASS	
ICL	5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS	

REMARKS: *ICC(QUIESCENT) WAS ALSO MEASURED AND MET SPEC AT ALL DOSES

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54S188	32X8 PROM	STTL	25-91 3370

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54S188AJ		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7808	CO-60	5	UNK.

CUM. DOSE (RADS): 0 35K 120K 340K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
IOH	5PASS		5PASS		5PASS		5PASS	
II	MA		*		*		1FAIL	
IIH	UA		5PASS		*		1FAIL	
IIL	UA		5PASS		*		1FAIL	
ICC	5PASS		5PASS		5PASS		5PASS	

REMARKS: *1FAIL:II=6.7MA(SPEC=1MA).IIH=590UA(SPEC=25UA).IIL=9.3UA(SPEC=-250UA).

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
54S74	DUAL D FLIPFLOP	STTL	25-89 3670

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54S74J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7723	CO-60	5	UNK.

CUM. DOSE (RADS): 0 19K 56K 140K 250K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIK *	5PASS		5PASS		5PASS		5PASS	
VOH	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
II	5PASS		5PASS		5PASS		5PASS	
IIH	5PASS		5PASS		5PASS		5PASS	
IIL	5PASS		5PASS		5PASS		5PASS	
IOS	5PASS		5PASS		5PASS		5PASS	

REMARKS: *ICC WAS MEASURED AT 34MA BEFORE AND AFTER IRRADIATION (MAX SPEC=25MA)

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54172	JK MASTER-SLAVE FF	TTL	25-50	3610

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN54L72J		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7646	CO-60	14	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	10K		40K		130K		250K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V _{OH}	14PAS		14PAS		14PAS		14PAS	
V _{OL}	14PAS		14PAS		14PAS		14PAS	
I _{IH}	14PAS		14PAS		14PAS		14PAS	
I _{IL}	14PAS		14PAS		14PAS		14PAS	
I _{CC}	14PAS		14PAS		14PAS		14PAS	
I _{OS}	14PAS		14PAS		14PAS		14PAS	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
54500	NAND GATE/INVERTER	STTL	76	3770

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETS	SN54S00	909902	HUGHES

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	VCC=5.5V, ALL OUTPUTS LOW

CUM. DOSE (RADS): 0

PARAMETERS	1MEG		3MEG		6MEG		15MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I _{CC}	24.20		24.00		24.00		24.00	
V _{IL}	.8000		.7750		.7400		.8300	
V _{IH}	1.360		1.430		1.425		1.425	
V _{OH}	3.081		3.030		3.010		3.060	
V _{OL}	.3940		.3960		.3980		.4040	
I _{IL}	MA 1.620		1.600		1.580		1.600	
I _{OS}	MA 66.20		65.80		63.60		66.80	

REMARKS:

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 GENERIC PART NUMBER: 5501

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
5501	1024X1 RAM	CMOS/SOS	802	1540

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	MWS5501D	COMMERCIAL	GSFC PPM

LDC	RAD. TYPE	PART QTY.	BIAS
7823	CO-60	20	+10V

CUM. DOSE (RADS): 0 2K 4K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
FUNCTIONALITY	20	PASS	10	FAIL	13	FAIL		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
5501	RAM	CMOS/SOS	701-3	3280

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RCA	MWS5501D		AFWL-TR-79-118

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	10	VCC=5V; 5 HAD VCC TO INPUTS, 5 HAD INPUTS AT GND

CUM. DOSE (RADS): 0 5K 7K 10K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC2	.099		1.390		1.890		2.260	
IOL	14.40		14.20		13.50		13.00	
IOH	6.410		5.730		5.030		4.850	
TAC	77.00		74.00		75.00		81.60	

REMARKS:

 GENERIC PART NUMBER: 5501

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
55180	DUAL NAND	TTL	25-92	3580

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SN55180L		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
P7701	CO-60	8	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	2.5K		10K		40K		130K *	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL	8PASS		8PASS		8PASS		8PASS	
II	8PASS		8PASS		8PASS		8PASS	
IL	8PASS		8PASS		8PASS		8PASS	
IIH	8PASS		8PASS		8PASS		8PASS	
IIL	8PASS		8PASS		8PASS		8PASS	
ICCL	8PASS		8PASS		8PASS		8PASS	
ICCH	8PASS		8PASS		8PASS		8PASS	

REMARKS: *ALL PARAMETERS WITHIN SPECIFIED LIMITS AT FINAL CUM DOSE OF 250K RAD.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
555	TIMER	BIPOLAR	64	3030

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM555H		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	6	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	500K		1.25M	
	MEAN	SD	MEAN	SD
TP	23.23	.2338	23.87	.6218
V0	4.930	.0837	4.492	.2268
FO	38.10	.7328	39.32	.9845

REMARKS:

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GENERIC PART NUMBER: 555

FUNCTION: TIMER

TECHNOLOGY: BIPOLAR

REF.NO. RECORD: 25-93 3330

MANUFACTURER: TI

PART NUMBER: SE555L

SPECIFICATION: AEROJET

DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS

P7650 CO-60 5 UNK.

CUM.DOSE(RADS): 0

PARAMETERS: MEAN SD 19K 56K 140K 250K

VOH 5PASS 5PASS 5PASS 5PASS 5PASS

VOL 5PASS 5PASS 5PASS 5PASS 5PASS

VTH 5PASS 5PASS 5PASS 5PASS 5PASS

VCON 5PASS 5PASS 5PASS 5PASS 5PASS

II 5PASS 5PASS 5PASS 5PASS 5PASS

ICC 5PASS 5PASS 5PASS 5PASS 5PASS

REMARKS:

GENERIC PART NUMBER: 555

FUNCTION: TIMING CIRCUIT

TECHNOLOGY: BIPOLAR

REF.NO. RECORD: 1057 5590

MANUFACTURER: MOTOROLA

PART NUMBER: MC1555

SPECIFICATION: TRW

DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS

7548 CO-60 + N* 10 VCC=+10V.

CUM.DOSE(RADS): 0

PARAMETERS: MEAN SD *N+200K

VOL MV 99.81 6.42 111.3 6.75

ITH NA 26.45 11.95 136.2 56.97

REMARKS: *NEUTRON RAD. = 6.04E11 N/SOCCM.

 GENERIC PART NUMBER 555
 FUNCTION TIMER
 TECHNOLOGY BIPOLAR
 REF.NO. RECORD 1069 5710

 MANUFACTURER
 PART NUMBER
 SPECIFICATION
 DATA SOURCE
 SIGNETICS SE555 TRW

LDC RAD. TYPE PART QTY. BIAS
 ** CO-60 + N* 10 V+--+10V.

CUM.DOSE(RADS): 0 *N+100K *N+300K *N+500K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VOL(1) MV 72.63 9.648 84.28 11.04 89.02 11.30 90.95 11.42
 VOL(2) MV 74.91 10.04 87.21 12.06 92.88 11.18 93.70 11.83
 -SEE REC.5711
 VTH V 9.978 .0042 9.982 .0042 9.988 .0042
 @VCE=15V
 *** VOL (1), (2)- SEE NOTE ON REC. 5711

REMARKS: **7847.7843. *NEUTRON RAD. = 6.E11 N/SQCM. ***CONTINUED ON REC. 5711

 GENERIC PART NUMBER 555
 FUNCTION TIMER
 TECHNOLOGY BIPOLAR
 REF.NO. RECORD 1069 5711

 MANUFACTURER
 PART NUMBER
 SPECIFICATION
 DATA SOURCE
 SIGNETICS SE555

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 N+100K N+300K N+500K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 ** ITH NA 6.755 4.350 50.99 32.17 143.8 74.25 192.3 96.84
 @VCC=15V.
 VOH V 13.54 .0372 13.45 .0538 13.40 .0831 13.36 .0906
 @IOH=100MA

REMARKS: **CONTINUATION FROM REC. 5710. (1)MEAS.<6S. POST-TURN-ON (2)>60S.PTO.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-3	3090

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7846N	2.5MEV EL	2	VCC=15V, VDD=-15V.

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC-BLK(5)*MA	1.40		1.35		1.40		1.38	
ICC-BLK(15)MA	3.60		3.60		3.65		3.75	
ICC-CONV(5)MA	5.25		4.05		3.57		1.90	
ICC-CNV(15)MA	9.65		8.23		7.75		4.40	
TBLANK(5) US	974		969		FAIL		FAIL	
TBLANK(15) US	931		1015		1075		FAIL	

---PARAMETERS CONT. ON REC. 3091.
 REMARKS: * MEAN=WORST-CASE PARAMETER VALUE (NOT AVG.); V=-15V, V+=() OR 5V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-3	3091

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS
-----	-----------	-----------	------

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TCONV(5) US	22.7		24.5		33.0		FAIL	
TCONV(15) US	22.9		24.6		31.8		FAIL	
IIL(5) NA	15.03		17.30		758		816	
IIL(15) NA	16.72		19.97		1064		1026	
IIL(5) UA	3.52		3.40		2.90		3.57	
IIL(15) UA	4.33		3.99		3.31		4.15	

REMARKS: CONTINUATION FROM RECORD 3090. *PARAMETERS CONTINUED ON RECORD 3092.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
571	10-BIT A/D CONVRTR.	IIL	1-3 3092

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL(5) MV	16.95		23.0		48.9		349	
VOL(15) MV	19.4		22.0		32.8		157	
IOL(5) MA	9.68		7.58		2.90		FAIL	
IOL(15) MA	12.18		10.90		7.20		1.39	
END								
CF								

PARAMETERS
 REMARKS: CONTINUATION FROM RECORD 3093.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
571	10-BIT A/D CONVRTR.	IIL	1-3 3092

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IOL(5) NA	0.120		6.95		777		3930	
IOL(15) NA	111.6		119.0		1491		7250	
VOH(5) V	4.92		4.93		4.91		4.82	
VOH(15) V	14.80		14.80		14.80		14.70	
IOL(5) MA	14.45		14.10		FAIL		FAIL	
IOL(15) UA	22.8		22.8		21.1		14.7	

* REMARKS: CONTINUATION FROM RECORD 3092. *PARAMETERS CONTINUED ON RECORD 3094.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-3	3092

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0

PARAMETERS	0		30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE-BLK(5) MA	10.55		10.24		8.32		7.91		9.77	
IEE-CONV MA	11.14		10.79		10.11		8.70		8.32	
OFFSET MV	10.07		10.07		9.16		44.3		FAIL	
OFFERR LSB	1.00		1.00		0.06		4.56		8.03	
NONLIN LSB	0.57		0.51		0.23		FAIL		FAIL	
IOZH(5) NA	1.50		10.37		1295		6380		3650	
IOZH(15) NA	9.30		23.5		2120		8800		5050	

REMARKS: CONTINUATION FROM RECORD 3091. PARAMETERS CONTINUED ON RECORD 3093.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-4	3100

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		JPL

LDC	RAD. TYPE	PART QTY.	BIAS

7846N	2.5MEV EL	4	VCC=15V, VDD=-15V.

CUM.DOSE(RADS): 0

PARAMETERS	0		30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC-BLK(5)*MA	1.45		1.35		1.30		1.30		1.20	
ICC-BLK(15)MA	3.42		3.27		3.25		3.20		3.05	
ICC-CONV(5)MA	6.75		5.10		4.40		3.75		2.45	
ICC-CONV(15)MA	11.18		9.25		8.45		7.75		3.45	
TBLANK(5) US	1.115		1.080		1.145		1.185		FAIL	
TBLANK(15) US	1.040		1.055		1.170		2.21		FAIL	

REMARKS: * MEAN = WORST-CASE PARAM. VALUE (NOT AVG.) @ VDD=-15V, VCC=().

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
571	10-BIT A/D CONVRTR.	IIL	1-4 3101

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TCONV(5) US	25.3		27.1		32.6		32.6	
TCONV(15) US	25.4		27.8		33.0		33.0	
IIL(5) NA	15.42		22.0		1060		1060	
IIL(15) NA	17.43		28.0		1450		1450	
IIL(5) UA	2.72		3.18		2.56		2.81	
IIL(15) UA	3.21		3.61		2.99		3.28	

*
 REMARKS: CONTINUATION FROM RECORD 3100. *PARAMETERS CONTINUED ON RECORD 3102.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO. RECORD
571	10-BIT A/D CONVRTR.	IIL	1-4 3102

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0

PARAMETERS	30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE-BLK(5) MA	9.31		8.83		9.47		8.34	
IEE-CONV MA	10.53		10.48		10.67		10.23	
OFFSET MV	6.10		6.10		74.8		107.1	
OFFERR LSB	0.594		0.594		7.69		11.00	
NONLIN LSB	0.158		0.332		0.457		1.150	
IOZH(5) NA	0.81		10.06		1510		2420	
IOZH(15) NA	1.46		21.37		1820		5070	

REMARKS: CONTINUATION FROM RECORD 3101. *PARAMETERS CONTINUED ON RECORD 3103.

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 GENERIC PART NUMBER: 571
 FUNCTION: 10-BIT A/D CONVRTR.
 TECHNOLOGY: IIL
 REF. NO. RECORD: 1-4 3103

 MANUFACTURER: ADI
 PART NUMBER: AD571
 SPECIFICATION: DATA SOURCE

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	0		30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IOZL(5)	NA	0.33	2.79		911		2630		445	
IOZL(15)	NA	0.35	10.08		1930		4580		1870	
VOH(5)	V	4.92	4.92		4.91		4.91		1.27	
VOH(15)	V	14.85	14.85		14.83		14.82		2.58	
IOH(5)	MA	24.2	23.3		20.8		6.57		FAIL	
IOH(15)	UA	23.0	22.9		22.6		22.0		2320	

 REMARKS: CONTINUATION FROM RECORD 3102. *PARAMETERS CONTINUED ON RECORD 3104.

 GENERIC PART NUMBER: 571
 FUNCTION: 10-BIT A/D CONVRTR.
 TECHNOLOGY: IIL
 REF. NO. RECORD: 1-4 3104

 MANUFACTURER: ADI
 PART NUMBER: AD571
 SPECIFICATION: DATA SOURCE

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	0		30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL(5)	MV	12.8	16.4		23.3		41.5		2390	
VOL(15)	MV	14.5	16.9		21.8		2980		2310	
IOL(5)	MA	9.29	8.38		6.78		2.85		FAIL	
IOL(15)	MA	12.07	11.16		10.08		6.77		0.008	

 REMARKS: CONTINUATION FROM RECORD 3103.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-5	3110

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7922N	2.5MEV EL	4	VCC=15V, VDD=-15V.

CUM.DOSE(RADS): 0 30.0K 75.0K 150K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC-BLK(5)*MA	1.35C		1.250		0.866		0.850		FAIL	
ICC-BLK(15)MA	3.50		3.35		3.30		3.30		FAIL	
ICC-CONV(5)MA	9.45		8.00		7.25		6.55		FAIL	
ICC-CONV(15)MA	0.995		1.030		1.040		FAIL		FAIL	
TBLANK(15) US	0.965		1.040		1.155		FAIL		FAIL	
TCONV(5) US	23.9		28.5		35.7		FAIL		FAIL	

PARAMETERS CONT. ON REC. 3111.
 REMARKS: MEAN = WORST-CASE PARAM. VALUE (NOT AVG.). *VCC=(), VDD=-15V.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-5	3111

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0 30.0K 75.0K 150K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TCONV(15) US	23.9		28.6		35.0		FAIL		FAIL	
IIL(5) NA	15.46		17.43		58.5		186		FAIL	
IIL(15) NA	17.99		20.2		82.3		271		FAIL	
IIL(5) UA	2.52		2.21		2.18		2.11		FAIL	
IIL(15) UA	2.90		2.49		2.45		2.40		FAIL	
IEE-BLK(5) MA	10.11		9.12		8.25		8.55		FAIL	
IEE-CONV(5)MA	11.30		10.03		8.67		8.68		FAIL	

REMARKS: CONTINUATION OF RECORD 3110. PARAMETERS CONTINUED ON RECORD 3112.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-5	3112
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
ADI	AD571			

LDLC	RAD.	TYPE	PART	QTY.	BIAS

CUM. DOSE (RADS):		0		30.0K		75.0K		150K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
OFFSET	MV	6.10		5.18		4.27		161			
OFFERR, LSB		0.593		0.500		0.406		16.53		FAIL	
NONLIN, LSB		1.055		1.082		1.528		3.355		FAIL	
10ZH(5)	NA	0.551		2.917		1.18		719		FAIL	
10ZL(5)	NA	0.154		0.504		45.2		452		FAIL	
10ZL(15)	NA	0.595		2.095		172		1140		FAIL	
VDH(5)	V	4.92		4.93		4.93		4.92		FAIL	

REMARKS: CONTINUATION OF RECORD 3111. PARAMETERS CONTINUED ON RECORD 3113.

4.92 4.93 4.94
V CONTINUATION OF RECORD 3111. PARAMETERS CONTINUED ON RECORD 3113.
REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-5	3113
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
ADI	AD571			

LDC	RAD.	TYPE	PART	QTY.	BIAS

CUM. DOSE (RADS):	0		30. OK		75. OK		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS										
VOH(15)	V	14.85	14.85		14.85		14.84		14.84	FAIL
IOH(5)	MA	25.3	21.3		FAIL		FAIL		FAIL	FAIL
IOH(15)	UA	22.9	22.8		22.1		14.9		14.9	FAIL
VOL(5)	MV	13.0	23.6		302		496		496	FAIL
VOL(15)	MV	14.6	20.9		124		2670		2670	FAIL
IOL(5)	MA	10.99	6.61		FAIL		FAIL		FAIL	FAIL
IOL(15)	MA	14.45	9.98		1.57		FAIL		FAIL	FAIL

REMARKS: CONTINUATION OF RECORD 3112.

IOU (15)	MA	14.45	9.38
REMARKS:	CONTINUATION OF RECORD 3112.		

 GENERIC PART NUMBER: 571
 FUNCTION: 10-BIT A/D CONVRTR. IIL
 REF. NO. RECORD: 1-6 3120

 MANUFACTURER: ADI
 PART NUMBER: AD571
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
 7922(2.5MEV EL 5 VCC=15, VDD=-15V.

CUM DOSE(RADS): 0 30K 75K 150K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 ICC-BLK(5)*MA 1.40 1.30 1.25 1.18 1.10
 ICC-BLK(15)MA 3.40 3.30 3.25 3.16 3.15
 ICC-CONV(5)MA 5.40 4.15 3.40 2.70 1.20
 ICC-CONV(15)MA 9.70 8.20 7.40 6.00 3.15
 TBLANK(5) US 0.970 1.025 1.020 FAIL
 TBLANK(15) US 0.940 1.005 1.045 FAIL
 --PARAMETERS CONT. ON REC. 3121.
 REMARKS: *()=VCC. NOTE: MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE).

 GENERIC PART NUMBER: 571
 FUNCTION: 10-BIT A/D CONVRTR. IIL
 REF. NO. RECORD: 1-6 3121

 MANUFACTURER: ADI
 PART NUMBER: AD571
 SPECIFICATION: JPL
 DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS

CUM DOSE(RADS): 0 30K 75K 150K 300K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 TCONV(5) US 25.5 27.6 30.5 30.5 FAIL
 TCONV(15) US 25.6 27.7 30.6 30.6 FAIL
 IIL(5) NA 15.43 16.91 42.7 148 309
 IIL(15) NA 17.83 19.55 56.4 199 420
 IIL(5) UA 4.04 3.09 2.61 2.37 2.23
 IIL(15) UA 5.08 3.56 3.01 2.68 2.59
 *
 REMARKS: CONTINUATION OF RECORD 3120. *PARAMETERS CONTINUED ON RECORD 3122.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-6	3122

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE-BLK(5) MA	10.19		9.58		8.45		9.08	
IEE-CONV(5) MA	11.06		10.59		8.63		9.34	
OFFSET MV	6.10		6.10		161		FAIL	
OFFERR LSB	0.59		0.59		16.53		FAIL	
NONLIN LSB	1.055		1.053		3.06		3.88	
IOZH(5) NA	1.525		58.9		411		758	
IOZH(15)* NA	165.4		176.5		647		1190	

REMARKS: CONTINUATION OF RECORD 3121. *PARAMETERS CONTINUED ON RECORD 3123.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-6	3123

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0

PARAMETERS	30K		75K		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IOZL(5) NA								
IOZL(15) NA								
VOH(5) V								
VOH(15) V								
IOH(5) MA								
IOH(15) UA								

REMARKS: CONTINUATION OF RECORD 3122. *PARAMETERS CONTINUED ON RECORD 3124.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-6	3124

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0									
		30K		75K		150K		300K	
PARAMETERS	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD
VOL(5) MV	12.91	18.29	80.8	502	571	1830	FAIL	FAIL	FAIL
VOL(15) MV	14.87	18.29	34.2	571	1830	FAIL	FAIL	FAIL	FAIL
IOL(5) MA	10.49	8.18	1.585	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL
IOL(15) MA	14.10	11.56	6.14	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL

END OF PARAMETERS.
REMARKS: CONTINUATION OF RECORD 3123.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-7	3130

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
R8D	2.5MEV EL	4	VCC=15V, VDD=-15V.

CUM.DOSE(RADS): 0									
		30K		75K		150K		300K	
PARAMETERS	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD	MEAN SD
ICC-BLK(5)*MA	1.50	1.50	1.55	1.55	1.55	1.55	1.55	1.55	1.55
ICC-BLK(15)*MA	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4
ICC-CONV(5)*MA	5.20	4.95	4.85	4.85	4.85	4.85	4.85	4.85	4.85
ICC-CONV(15)*MA	11.68	11.33	11.25	11.25	11.25	11.25	11.25	11.25	11.25
TBLANK(5) US	0.99	1.08	1.17	1.17	1.17	1.17	1.17	1.17	1.17
TBLANK(15) US	0.96	1.03	1.08	1.08	1.08	1.08	1.08	1.08	1.08

REC. 3131.
--PARAMETERS CONT. ON
REMARKS: (*)=VCC. NOTE: MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE).

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 571 10-BIT A/D CONVRTR. IIL 1-7 3131

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 ADI AD571

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 30K 75K 150K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TCONV(5) US	30.3		31.9		32.9		34.6		FAIL	
TCONV(15) US	30.3		32.0		33.0		34.5		FAIL	
IIL(5) NA	15.78		21.9		445		391		FAIL	
IIL(15) NA	15.09		28.8		668		563		FAIL	
IIL(5) UA	0.71		1.07		1.12		1.19		FAIL	
IIL(15) UA	0.86		1.25		1.21		1.28		FAIL	

 REMARKS: CONTINUATION OF RECORD 3130. *PARAMETERS CONTINUED ON RECORD 3132.

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

 571 10-BIT A/D CONVRTR. IIL 1-7 3132

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 ADI AD571

 LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 30K 75K 150K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IEE-BLK(5) MA	9.70		9.54		9.48		9.39		FAIL	
IEE-CONV(5) MA	10.97		10.75		10.6		9.9		FAIL	
OFFSET MV	1.295		2.24		130		635		FAIL	
OFFERR LSB	0.132		0.229		12.9		FAIL		FAIL	
NONLIN LST	0.153		0.263		0.453		FAIL		FAIL	
IOZH(5) NA	0.511		30.4		1760		2560		FAIL	
IOZH(15) * NA	1.26		57.9		2190		3210		FAIL	

 REMARKS: CONTINUATION OF RECORD 3133. *PARAMETERS CONTINUED ON RECORD 3133.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-7	3133

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	30K		75K		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IOZL(5)	NA	0.098	27.1	1100	2990		FAIL	
IOZL(15)	NA	0.490	85.6	2700	6180		FAIL	
VOH(5)	V	4.93	4.91	4.91	4.91		FAIL	
VOH(15)	V	14.85	14.83	14.83	14.83		FAIL	
IOH(5)	MA	26.57	26.53	26.14	23.18		FAIL	
IOH(15)	UA	24.8	24.6	23.8	23.7		FAIL	

REMARKS: CONTINUATION OF RECORD 3132. *PARAMETERS CONTINUED ON RECORD 3134.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL	1-7	3134

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	30K		75K		150K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL(5)	MV	15.2	17.0	14.5	26.2		FAIL	
VOL(15)	MV	19.2	20.3	21.4	26.1		FAIL	
IOL(5)	MA	8.57	8.18	7.85	FAIL		FAIL	
IOL(15)	MA	11.6	11.5	10.9	FAIL		FAIL	

END
 OF

PARAMETERS

REMARKS: CONTINUATION OF RECORD 3133.

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LDC	RAD.	TYPE	PART	QTY.	BIAS
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
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44	44	44	44	44	44
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49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75					

LDC	RAD.	TYPE	PART	QTY.	BIAS
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REMARKS: CONTINUATION FROM RECORD 3142. *PARAMETERS CONTINUED ON RECORD 3144.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
571	10-BIT A/D CONVRTR.	IIL		3144

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD571		

LDC	RAD.	TYPE	PART	QTY.	BIAS

CUM. DOSE (RADS):		0		30K		75K		150K		600K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL(5)	MV	12.21		13.65		15.48		23.5		423	
VOL(15)	MV	15.29		16.13		17.28		21.5		778	
IOL(5)	MA	12.0		10.8		9.7		6.1		FAIL	
IOL(15)	MA	15.9		14.6		13.5		10.4		FAIL	

PARAMETERS
REMARKS: CONTINUATION FROM RECORD 3143.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	A TO D CONVERTER	BIPOLAR	401-1	3800

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AD	A0571		INSAT-PCC 860

LDC	RAD.	TYPE	PART QTY.	BIAS
UNK	C0-60	1	V+=+5.00V.	V=-15.00V

[illegible]

REMARKS: * "TWO POINTS MALFUNCTIONED." ("POINT" = PINS? -EDITOR.)

 GENERIC PART NUMBER: 571
 FUNCTION: 10-BIT A/D CONVERTER
 TECHNOLOGY: IIL
 REF. NO. RECORD: 1056 5580

MANUFACTURER: AD571
 ANALOG DEVICES
 PART NUMBER: AD571
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS
 8013 CO-60 + N* 10 V+=+5V; V-=-15V.

CUM. DOSE (RADS): 0 *N+30K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VOS(ABS) MV 2.667 2.092 7.869 10.72
 VOL9 MV 146.7 9.615 183.7 20.33
 VOL2 MV 144.5 8.396 181.5 17.14
 VOL8 MV 143.8 7.861 180.6 18.38
 VOL1 MV 150.1 8.175 186.6 17.67
 VOL7 MV 144.1 8.164 180.6 17.97
 **

REMARKS: *NEUTRON RAD. = 6E11 N/SQCM. **CONTINUED ON RECORD 5581.

 GENERIC PART NUMBER: 571
 FUNCTION: 10-BIT A/D CONVERTER
 TECHNOLOGY: IIL
 REF. NO. RECORD: 1056 5581

MANUFACTURER: AD571
 ANALOG DEVICES
 PART NUMBER: AD571
 SPECIFICATION: TRW
 DATA SOURCE: TRW

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 N+30K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VOL18 MV 140.4 6.935 176.7 16.88
 VOL6 MV 144.1 8.434 180.6 16.89
 VOL17 MV 155.4 7.660 186.6 13.50
 VOL5 MV 144.5 8.433 182.0 17.35
 VOL4 MV 144.7 8.394 180.9 17.34
 VOL3 MV 144.3 8.463 180.2 16.74

REMARKS: CONTINUATION OF RECORD 5580.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVERTR	IIL	1076	5780

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD571		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60 + N*	5	V+=+5V; V=-15V.

CUM. DOSE (RADS):	O	*N+30K		*N+40K		*N+60K		*N+80K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
VOL(11)**	MV	159.5	12.36	181.1	14.00	185.7	14.87	210.0	26.58
IOL(11)**	MA	19.89	2.764	15.65	2.986	14.99	3.023	12.55	3.259
VOL(11)**	V	3.570	.0355	3.540	.0358	3.537	.0363	3.514	.0381
ILHZD(10)**	NA	-1.55	4.409	-1.16	4.476	-1.769	4.546	-1.119	4.600
ILHZI(10)**	NA	782.5	1747.	783.5	1747.	783.1	1747.	783.5	1747.

CONTINUED ... ON REC. 5781
 REMARKS: *NEUTRON FLUENCE=6.E11 N/SQCM. ** (X) MEANS PARAM. AVG. OVER X PINS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVERTR	IIL	1076	5781

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):	O	*N+30K		*N+40K		*N+60K		*N+70K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS									
-IOS(11)	MA	54.47	5.195	54.62	5.219	54.95	5.257	56.81	5.519
								59.12	6.113

*

REMARKS: CONTINUATION OF RECORD 5780. *CONTINUED ON RECORD 5782.

 GENERIC PART NUMBER: 571

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVERTER	IIL	1076	5782

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	N+30K		N+40K		N+60K		N+80K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LINEARITY(+)								
MILLI-LSB	228.8	115.8	374.2	72.42	452.7	100.9	570.0	150.0
-LINEARITY(-)								
MILLI-LSB	276.5	61.89	420.1	61.75	471.0	120.0	653.4	114.0
STEP-								
DEVIATION(+)								
MILLI-LSB	213.0	65.25	296.1	73.72	356.9	92.98	500.6	128.8
REMARKS:	CONTINUATION OF RECORD 5781.							
	CONTINUED ON RECORD 5783.							

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVERTER	IIL	1076	5783

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	N+30K		N+40K		N+60K		N+80K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
-STEP								
DEVIATION(-)								
MILLI-LSB	178.0	44.91	156.1	22.17	155.8	22.06	174.6	27.54
VOLTAGE								
SCALE	V	9.966	.0039	9.944	.0077	9.939	.0089	9.925
-OFFSET								
VOLTAGE	V	.6724	3.660	.8900	5.105	1.285	4.951	2.452
REMARKS:	CONTINUATION FROM RECORD 5782.							
	CONTINUED ON RECORD 5784							

 GENERIC PART NUMBER: 571

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 GENERIC PART NUMBER: 571

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVERTR	IIL	1076	5784

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	N+30K		N+40K		N+50K		N+80K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVERAGE	9.742	.0040	9.720	.0074	9.716	.0091	9.702	.0112
LSB	7.240	0.366	6.050	0.260	5.940	0.268	5.580	0.259
ICC	9.510	0.313	8.510	0.204	8.370	0.220	8.070	0.293
-IEE								

**

REMARKS: CONTINUATION FROM RECORD 5783. **CONTINUED ON RECORD 5785.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
571	10-BIT A/D CONVERTR	IIL	1076	5785

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD571		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS): 0

PARAMETERS	N+30K		N+40K		N+80K		N+100K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TCC	22.64	1.97	(NO DATA)		27.56	2.06	30.46	2.27
IIL	1.260	0.284	1.350	0.304	2.230	0.401	3.420	0.432
-IIL	3.189	.8230	3.153	.5196	3.278	.4583	3.413	.4422

REMARKS: CONTINUATION FROM RECORD 5784.

 GENERIC PART NUMBER: 571

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
574	12-BIT A/D CONVRTR.	IIL	1-10 3050

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7903N	1.25MEVGAM	2	VCC=15, VDD=-15V, VLOGIC=5V.

CUM. DOSE(RADS): 0

PARAMETERS	0		30K		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VREF(MIN)* V	9.97		9.98		9.98		9.98		9.99	
IREF(MIN) MA	1.43		1.20		3.74		3.93		3.47	
ILOGIC(MAX) MA	18.90		19.44		26.0		27.0		26.6	
ICC(MAX) MA	1.533		1.535		1.535		1.540		1.539	
IDD(MAX) MA	13.55		12.06		11.05		10.85		10.65	

--PARAMETERS CONT. ON REC. 3051.
 REMARKS: * MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE); BIAS AS ABOVE.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
574	12-BIT A/D CONVRTR.	IIL	1-10 3051

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		

LDC	RAD. TYPE	PART QTY.	BIAS
-----	-----------	-----------	------

CUM. DOSE(RADS): 0

PARAMETERS	0		JOK		75K		150K		600K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TCONV(MAX) US	21.00		21.35		FAIL		FAIL		FAIL	
TDSC(MAX) NS	264		255		1024		1024		1024	
TDS(MAX) NS	541		554		FAIL		FAIL		FAIL	
OFFSET(MAX)UV	2.13		4.88		FAIL		FAIL		FAIL	
OFFERR LSB	0.75		1.87		FAIL		FAIL		FAIL	
AOL OFF LSB	.0092		FAIL		FAIL		FAIL		FAIL	
AOL ERR LSB	1.121		FAIL		FAIL		FAIL		FAIL	

REMARKS: CONTINUATION FROM RECORD 3050. PARAMETERS CONTINUED ON RECORD 3052.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
574	12-BIT A/D CONVRTR.	IIL	1-10 3052

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 30K 75K 150K 600K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
NONLIN	1.045		8.55		FAIL		FAIL		FAIL	
IOZH(MAX)	3.28		4.92		6420		953		571	
IOZL(MAX)	.0683		1.347		FAIL		FAIL		FAIL	
VOH(MIN)	4.48		4.07		FAIL		FAIL		FAIL	
VOL(MAX)	17.27		21.1		549		158		428	
IOH(MIN)	2.28		0.807		0.177		0.822		0.556	
IOL(MIN)	7.05		6.68		.0072		0.758		0.527	

REMARKS: CONTINUATION FROM RECORD 3051. PARAMETERS CONTINUED ON RECORD 3053.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
574	12-BIT A/D CONVRTR.	IIL	1-10 3053

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0 30K 75K 150K 600K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IILH(MAX)	0.891		1.403		1.793		1.964		2.52	
IIL(MAX)	14.26		14.86		16.34		21.0		55.4	
TDD(MAX)	344		329		FAIL		FAIL		FAIL	
THS(MAX)	32.0		19.9		FAIL		FAIL		FAIL	

END OF

PARAMETERS
 REMARKS: CONTINUATION FROM RECORD 3052.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
574	12-BIT A/D CONVRTR.	TTL	1-11	3060

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7909N	C0-60	3	VCC=15V. VDD=-15V. VLOGIC=5V.

CUM. DOSE (RADS) :	0			30K			75K		
	MEAN	SD		MEAN	SD		MEAN	SD	
PARAMETERS									
VRREF(MIN)* V	9.97			9.98			9.98		
IRREF(MIN)* MA	1.545			4.87			5.26		
ILLOGIC(MAX)*MA	22.2			26.8			27.4		
ICC(MAX)* MA	1.720			1.725			1.825		
IDD(MAX)* MA	14.50			13.40			12.80		

---PARAMETERS CONT. ON REC. 3061.
REMARKS: * MEAN = WORST-CASE PARAMETER VALUE (NOT AVG.); BIAS SAME AS ABOVE.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
574	12-BIT A/D CONVRTR.	TTL	1-11	3051

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		

LDC	RAD.	TYPE	PART	QTY.	BIAS
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75					

CUM. DOSE (RADS) :	0			30K			75K		
	MEAN	SD		MEAN	SD		MEAN	SD	
PARAMETERS									
TCONV(MAX)*US	27.7			27.9			FAIL		
ITDSC(MAX) * NS	336			331			FAIL		
ITDS(MAX) * NS	626			636			FAIL		
OFFSET(MAX)*MV	2.13			1.831			FAIL		
DFERR* LSB	0.75			0.75			FAIL		
AOL OFF* LSB	0.01			0.007			FAIL		
AOL ERR* LSB	4.87			2.99			FAIL		

REMARKS: CONTINUATION FROM RECORD 3060. PARAMETERS CONTINUED ON RECORD 3062.

FAIL
PARAMETERS CONTINUED ON RECORD 3062.

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

574 12-BIT A/D CONVRTR. TTL 1-11 3062

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

ADI AD574JD

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 30K 75K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

NONLIN* LSB 1.013 FAIL
IOZH(MAX)* NA 0.75 1510 FAIL
IOZL(MAX)* NA 0.099 141 FAIL
VOH(MIN)* V 4.44 2.13 FAIL
VOL(MAX)* MV 23.2 28.7 88.7
IOH(MIN)* MA 2.59 0.889
IOL(MIN)* MA 6.77 6.59 0.831
REMARKS: CONTINUATION FROM RECORD 3061. PARAMETERS CONTINUED ON RECORD 3063

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

574 12-BIT A/D CONVRTR. TTL 1-11 3063

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

ADI AD574JD

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0 30K 75K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

I1H(MAX)* UA 1.382 1.828 2.14
I1L(MAX)* NA 14.50 14.80 28.4
TDD(MAX)* NS 351 329 FAIL
THS(MAX)* NS 4.58 FAIL
END
OF

PARAMETERS
REMARKS: CONTINUATION FROM RECORD 3062.

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 GENERIC PART NUMBER 574

 FUNCTION 12-BIT A/D CONVRTR. IIL 1-12 3070
 TECHNOLOGY
 REF.NO. RECORD

 MANUFACTURER ADI
 PART NUMBER AD574JD
 SPECIFICATION
 DATA SOURCE JPL

LDC RAD. TYPE PART QTY. BIAS
 7905N 1.25MEV** 2 VCC=15V, VDD=-15V, VLOGIC=5V.

CUM.DOSE(RADS): 0 30K 75K
 PARAMETERS
 VREF(MIN) V 9.97 9.99
 IREF(MIN) MA 1.47 3.92 4.16
 ILOGIC(MAX)MA 21.0 41.8 31.2
 ICC(MIN) MA 1.625 1.670
 IDD(MAX) MA 13.73 12.60 11.45

---PARAMETERS CONT. ON REC. 3071.
 REMARKS: MEAN=WORST-CASE VALUE (NOT AVG.). **NOT STATED WHETHER EL OR GAMMA.

 GENERIC PART NUMBER 574

 FUNCTION 12-BIT A/D CONVRTR. IIL 1-12 3071
 TECHNOLOGY
 REF.NO. RECORD

 MANUFACTURER ADI
 PART NUMBER AD574JD
 SPECIFICATION
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 30K 75K
 PARAMETERS
 TCONV(MAX) US 21.2 20.5 FAIL
 TDSC(MAX) NS 280 273 FAIL
 TDS(MAX) NS 626 636 FAIL
 OFFSET(MAX)MV 2.13 FAIL
 OFFERR LSB 0.00 FAIL
 AOL OFF LSB 10.07 FAIL
 AOL ERR LSB 4.12 FAIL
 REMARKS: CONTINUATION FROM RECORD 3070. PARAMETERS CONTINUED ON RECORD 3072.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
574	12-BIT A/D CONVRTR.	IIL	1-12	3072

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0 30K 75K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
NONLIN	1.013		FAIL		FAIL		FAIL	
IOZH(MAX)	NA	0.75	1510		FAIL		FAIL	
IOZL(MAX)	NA	0.099	141		FAIL		FAIL	
VOH(MIN)	V	4.44	2.13		FAIL		FAIL	
VOL(MAX)	MV	23.2	28.7		88.7			
IOH(MIN)	MA	2.39	0.899		0.885			
IOL(MIN)*	MA	6.77	6.59		0.831			

REMARKS: CONTINUATION FROM RECORD 3071. *PARAMETERS CONTINUED ON RECORD 3073.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
574	12-BIT A/D CONVRTR.	IIL	1-12	3073

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD574JD		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM.DOSE(RADS): 0 30K 75K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IIH(MAX)	UA	1.382	1.828		28.4		2.14	
IIL(MAX)	NA	14.50	14.80		FAIL		FAIL	
TDD(MAX)	NS	351	329		FAIL		FAIL	
THS(MAX)	NS	4.58	FAIL					

END
 OF
 PARAMETERS

REMARKS: CONTINUATION FROM RECORD 3072.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
582	SAMP/HOLD AMPLIFIER	BI-FET	401-2 3210

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
AD	AD582		INSAT PCC 860

LDC	RAD. TYPE	PART QTY.	BIAS
UNK	CO-60	5	V+=7.5V, V--7.5V

CUM. DOSE (RADS):		0		700K		800K		900K		1MEG	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
D COS	MV	1.600	1.140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.36 1.513
D IBT	MA	-1.14	.1342	.0600	.0894	.0600	.0600	.0600	.0894	-1.04 .0548	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
582	SAMPLE/HOLD	JFET	1001 5000

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD582		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8101	CO-60	4	V+=12V, V--12V, 8KHZ SQ WAVE (0-+5V) TO SAMPLE *

CUM. DOSE (RADS):		0		30K		100K		300K		1MEG	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
AVOL 1HZ	DB	102.4	0.31	102.1	0.26	100.9	0.62	98.45	0.51	97.15	0.58
AVOL 1KHZ	DB	43.15	0.48	42.68	0.21	41.28	0.39	38.65	0.68	37.33	0.89
AVOL 5KHZ	DB	29.10	0.24	28.55	0.24	27.05	0.42	22.95	1.58	21.00	1.72
IOS	NA	-118.	106.1	-84.7	76.91	-43.6	62.77	-68.1	75.79	-65.9	99.96
IB	UA	1.508	0.196	1.593	0.177	1.525	0.173	1.420	0.163	1.628	0.156
VOS	MV	0.602	3.828	-0.45	1.622	-0.05	0.891	0.192	2.238	-0.38	2.135
IDROOP	PA	-34.6	32.68	-22.1	28.95	4.35	32.41	-1.05	78.01	-80.8	257.9

REMARKS: *SWITCH, 100 HZ (10V P-P) SINE WAVE TO SAMPLE INPUT.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
590	TEMP. TRANSDUCERS	BIPOLAR	1015	5140

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ANALOG DEVICES	AD590UH		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
CO-60	10		VDD=+10V.

CUM. DOSE (RADS):	0	.73MEG	1.0MEG	1.5MEG	1.8MEG	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
ERROR	2.00	0.460	2.42	0.515	2.97	0.544
(DEGREES CENTIGRADE)					3.60	0.589

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6N134	OPTOCOUPLER	BIPOLAR	24-43	3840

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HEWLETT PACKARD	6N134	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
CO-60	5		VDD=5V

CUM. DOSE (RADS):	0	30K	100K	300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
D I/O(.25)MA	-.004	0.006	0.005	0.001	0.010	0.005
D I/O(2.0)MA	-.064	0.073	0.122	0.120	0.611	0.534
D I/O(5.0)MA	-.609	0.459	0.265	0.202	0.942	0.686

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
6N134	DUAL-CH GPTOCOUPLER	BIPOLAR	1029	5310
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
HEWLETT-PACKARD	6N134	TRW		

LDC	RAD. TYPE	PART QTY.	BIAS
7815	CO-60	10	PINS: 15@5V.; 14, 12 VIA 500HMS TO 5V.; 2, 6, 10@GND

CUM. DOSE (RADS):		300K		500K		750K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD
VF	V	1.511	0.003	1.513	0.005	1.515	0.005
IR	UA	0.5	0	0.509	0.003	0.5	0
VOL	MV	354.9	28.54	345.4	30.26	346.0	31.03
IOH	UA	21.92	3.923	11.69	3.001	12.14	5.267
TPHL	NS	34.51	5.004	32.51	3.629	34.29	5.409
TPLH	NS	34.45	0.945	36.95	0.878	37.13	0.710
						37.74	0.912

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
6504	(4K) X (1) RAM	CMOS	23	3920

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
HARRIS	MS6504RH	LITTON GC		

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	3	5.5 V

CUM. DOSE (RADS):		50K	
PARAMETERS		MEAN	SD
ACC	NS	120.0	100.0
ADD VIL	V	1.230	1.230
ADD VIH	V	3.470	3.180
IOH .4	MA	10.23	10.23
IOH .4	MA	-3.77	-3.77

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6504	(4K) X (1) RAM	CMOS	23	3930

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HS6504RH		LITTON GC

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	3	5 V

CUM. DOSE (RADS) :	0			50K		
	MEAN	SD		MEAN	SD	
PARAMETERS						
ACC	133.0		NS	107.0		
DATA RET	2.760		V	1.720		
ADD IL	1.150		V	1.100		
ADD IH	3.000		V	2.700		
IOL .4	9.700		MA	10.23		
IOH .4	-3.95		MA	-3.65		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6504	(4K) X (1) RAM	CMOS	23	3940

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HS6504RH		LITTON GC

LDC	RAD. TYPE	PART QTY.	BIAS
LINK.	C0-60	3	4.5 V

CUM. DOSE (RADS) :		0			50K		
PARAMETERS		MEAN	SD		MEAN	SD	
ACC	NS	154.0			120.0		
ADD VIL	V	1.120			1.080		
ADD VIH	V	2.580			2.380		
IOL .4	MA	8.820			10.03		
IOL .4	MA	-3.73			-3.38		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
6504	(4K) X (1) RAM	CMOS	23	3950

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HS6504RH		LITTON GC

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	5.5 V

CUM. DOSE(RADS): 0 20K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ACC	NS	123.0			110.0			
ADD VIL	V	1.490			1.430			
ADD VIH	V	3.240			2.910			
IOL .4	MA	10.23			10.23			
IOH .4	MA	-3.88			-3.77			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
6504	(4K) X (1) RAM	CMOS	23	3960

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HS6504RH		LITTON GC

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	5	5 V

CUM. DOSE(RADS): 0 20K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ACC	NS	137.0			121.0			
DATA RET	V	2.800			2.270			
ADD VIL	V	1.320			1.250			
ADD VIH	V	2.780			2.580			
IOL .4	MA	9.070			9.540			
IOH .4	MA	-3.70			-3.55			

REMARKS:

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 OF POOR QUALITY

GENERIC PART NUMBER: 6504

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GENERIC PART NUMBER: 6504
FUNCTION: (4K) X (1) RAM
TECHNOLOGY: CMOS
REF. NO. RECORD: 23 3970

MANUFACTURER: HARRIS
PART NUMBER: HS6504RH
SPECIFICATION: LITTON GC
DATA SOURCE: LITTON GC

LDC RAD. TYPE PART QTY. BIAS
UNK. CO-60 5 4.5V

CUM.DOSE(RADS): 0 20K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ACC	NS	160.0		137.0				
ADD VIL	V	1.210		1.100				
ADD VIH	V	2.430		2.260				
IOL .4	MA	8.090		8.960				
IOH .4	MA	-3.49		-3.31				

REMARKS:

GENERIC PART NUMBER: 6508
FUNCTION: 1024X1 RAM
TECHNOLOGY: CMOS
REF. NO. RECORD: 1-36 3820

MANUFACTURER: INL
PART NUMBER: IM6508
SPECIFICATION: JPL
DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
NONE CO-60 3 VCC=5V.

CUM.DOSE(RADS): 0 .3K 1.0K 3.0K

PARAMET	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC (MAX) UA	0.045		0.024		2100		11000	
MARCH	PASS		PASS		PASS		FAIL	
GALPAT	PASS		PASS		PASS		FAIL	

REMARKS: MEAN = WORST-CASE VALUE (NOT AVERAGE).

GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER: 6508
FUNCTION: 1024X1 RAM
TECHNOLOGY: CMOS
REF. NO. RECORD: 1-35 3839
MANUFACTURER: INL
PART NUMBER: IM6508
SPECIFICATION: JPL
DATA SOURCE: JPL

LDC RAD. TYPE PART QTY. BIAS
7529 CO-60 3 VCC=5V.

CUM. DOSE (RADS): 0 .3K 1.0K 3.0K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
ICC (MAX) UA .0020 .0036 480 27000
MARCH PASS PASS FAIL
R/W PING PONG PASS PASS FAIL

REMARKS: MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE).

GENERIC PART NUMBER: 6508
FUNCTION: 1024X1 RAM
TECHNOLOGY: CMOS
REF. NO. RECORD: 25-97 3850
MANUFACTURER: HARRIS
PART NUMBER: HM9-6508-2
SPECIFICATION: AEROJET
DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS
* CO-60 12 +5V, DIAGONAL PATTERN STORED IN MATRIX.

CUM. DOSE (RADS): 0 10.0K 21.5K
PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
II ** 12PAS 12PAS 12PAS 12PAS
VOH1 12PAS 12PAS 12PAS 12PAS
VOH2 12PAS 12PAS 12PAS 12PAS
VOL1 12PAS 12PAS 12PAS 12PAS
VOL2 12PAS 12PAS 12PAS 12PAS
WAKPAT 12PAS 12PAS 12PAS 12PAS
GALPAT 12PAS 12PAS 12PAS 12PAS
REMARKS: *703-15,703-19,703-14. **IDD,IDD(*,2,3,4).HFE, IDOSE, TAC PASS ALL DOSES

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6508	1024X1 RAM	CMOS	25-96	3880

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM1-6508-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7841	CO60	7	+5V

CUM. DOSE (RADS):		0		4K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
II *	PASS		PASS			
VOH1	PASS		PASS			
VOH2	PASS		PASS			
VOL1	PASS		PASS			
VOL2	PASS		PASS			
IDOSE	PASS		PASS			
TAC	PASS		PASS			

REMARKS: *IDD, IDD1, IDD2, IDD3, IDD4, HFE, WAKPAT, GALPAT ALSO MEASURED AND PASSED.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6551	256-WORDX4-BIT RAM	CMOS	25-98	3860

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM1-6551-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
* (2)	CO-60	7	+5V, DIAGONAL PATTERN.

CUM. DOSE (RADS):		0		**		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
II **	7PASS		7PASS			
VOH1	7PASS		7PASS			
VOH2	7PASS		7PASS			
VOL1	7PASS		7PASS			
VOL2	7PASS		7PASS			
IDOSE	7PASS		7PASS			
TAC	7PASS		7PASS			

REMARKS: *2 7734D; 5 7807. **REMARKS AND PARAMETERS CONTINUED ON RECORD 3861.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6551	256-WORDX4-BIT RAM	CMOS	25-98	3861

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM1-6551-2		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0 **

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IDD *	7PASS		7PASS		7PASS		7PASS	
HFE	7PASS		7PASS		7PASS		7PASS	

FUNCTIONALITY

(1) WKPAT	7PASS
(2) GALPAT	7PASS

REMARKS: *CONT. FROM REC. 3860. **IRRADIATED UNTIL IT=2.4MA (DOSE=3.6-3.9 KRAD)

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6551	256-WORDX4-BIT RAM	CMOS	25-99	3870

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM9-6551-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
725-4	CO-60	5	+5V, AND WITH A DIAGONAL PATTERN STORED IN MATRIX.

CUM. DOSE (RADS): 0 **

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
II *	5PASS		5PASS		5PASS		5PASS	
VGH1	5PASS		5PASS		5PASS		5PASS	
VGH2	5PASS		5PASS		5PASS		5PASS	
VOL1	5PASS		5PASS		5PASS		5PASS	
VOL2	5PASS		5PASS		5PASS		5PASS	
IDOSE	5PASS		5PASS		5PASS		5PASS	
TAC	5PASS		5PASS		5PASS		5PASS	

REMARKS: *CONTINUED ON REC. 3871. **8.2K TO 10.0K (EXPOSED UNTIL II=2.4MA).

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6551	256-WORDX4-BIT RAM	CNDS		3871

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM9-6551-2		

LDC	RAD.	TYPE	PART	QTY.	BIAS
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75					

CUM. DOSE (RADS) :	0		**					
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS								
IOD *	5PASS							
IDD1,2,3,4	5PASS							
HFE	5PASS							
WAKPAT	5PASS							
GALPAT	5PASS							
FUNCTIONALITY	5PASS							

REMARKS: *CONTINUATION FROM REC. 3870. **SEE REMARKS ON REC. 3870.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6551	256X4 RAM	CWDS	9A	3890

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HS6551-RH	COMMERCIAL	JPL

LDC	RAD. TYPE	PART QTY.	BIAS
8119B	CO-60	6	VCC=5.5V

CUM. DOSE (RADS) :		0		20K		40K		80K		120K	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS											
VTH	V	2.04		1.69		1.41		.924		FAIL	
NS	NS	--		-20		-26		-30		FAIL	
IOH	MA	-3.14		-2.97		-2.83		-2.55		-2.32	
ICC	MA	5.81		7.37		17.6		25.8		41.2	

REMARKS: PARAMETER DATA = WORST-CASE VALUES.

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 GENERIC PART NUMBER: 6551

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
6551	256X4 RAM	CMOS	97 3900

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HS6551	COMMERCIAL	JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7909	CO-60	6	VCC=5.5V

CUM.DOSE(RADS): 0

PARAMETERS	4K		8K		10K		12K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTH *	1.46		1.31		1.10		FAIL	
DTW *	NS		5		11		14	
ICC *	MA		13.3		14.3		22.3	
							FAIL	
							FAIL	
							29.1	

REMARKS: * MEAN=WORST-CASE (NOT AVG.). **VALIDITY QUESTIONABLE: VALUES HIGH.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
6551	256X4 RAM	CMOS	96 3910

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM6551	COMMERCIAL	JPL

LDC	RAD. TYPE	PART QTY.	BIAS
8049	CO-60	6	VCC=5.5V

CUM.DOSE(RADS): 0

PARAMETERS	4K		8K		12K		14K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTH	1.661		1.383		1.126		FAIL	
DTW	NS		-4.0		-7.0		FAIL	
ICC	UA		.028		6220		11550	
			1885				FAIL	
							FAIL	
							14700	

REMARKS: PARAMETER DATA = WORST CASE VALUES.

 GENERIC PART NUMBER: 6551

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
6611	256 X 4 PROM	CMOS	3	3810

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM9-6611AB2208		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
8025	CO-60	6	PINS 4,5,6,13,14,15,16 AT 5V; PINS 1,2,3,7,8 AT 0V

CUM. DOSE (RADS): 0 3K 5K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTN	1.051	0.115	0.781	0.136	0.445	0.0345		
ICCS	0.0	0.0	13.91	23.46	114.4	150.8		
ISUP	22.67	3.163	24.23	3.800	24.80	1.697		
D VTN* V/KRAD			.0933		.1160			

REMARKS: *THIS PARAMETER IS ACTUALLY DVTN/D(RADIATION).

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
723	VOLT. REGULATOR	BIPOLAR	24-28	4190

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM723	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8011	CO-60	8	V+=VC=20V

CUM. DOSE (RADS): 0 30K 100K 300K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D L/RG1-50MA%	-0.026	0.007	-0.025	0.008	-0.021	0.012		
D L/RG20-40 %	-0.019	0.012	-0.016	0.011	0.003	0.011		
D REF/V	0.000	0.002	-0.001	0.003	-0.006	0.002		

REMARKS:

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GENERIC PART NUMBER: 723

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 GENERIC PART NUMBER: 723

 FUNCTION: VOLTAGE REG
 TECHNOLOGY: BIPOLAR
 REF. NO.: 26
 RECORD: 4200

 MANUFACTURER: UNKNOWN
 PART NUMBER: 723HC
 SPECIFICATION: IRT
 DATA SOURCE: IRT

 LDC RAD. TYPE: CO-60
 PART QTY.: 10
 BIAS: V+=VC=15V

 CUM. DOSE (RADS): 0
 2M
 PARAMETERS: MEAN SD
 V(OUT) V 5.169 .0311 5.138 .0210

REMARKS:

 GENERIC PART NUMBER: 723

 FUNCTION: VOLT. REGULATOR
 TECHNOLOGY: BIPOLAR
 REF. NO.: 24-29
 RECORD: 4210

 MANUFACTURER: FAIRCHILD
 PART NUMBER: LM723J
 SPECIFICATION: COMMERCIAL
 DATA SOURCE: ROCKWELL

 LDC RAD. TYPE: CO-60
 PART QTY.: 8
 BIAS: V+=VC=20V

 CUM. DOSE (RADS): 0
 30K 100K 300K
 PARAMETERS: MEAN SD MEAN SD MEAN SD
 D L/RG1-50MA% 0.877 0.343 0.932 0.283 -.093 0.148
 D L/RG20-40V% -.029 0.009 -.016 0.011 -.003 0.003
 D REF/V 0.002 0.001 0.004 0.005 0.002 0.002

REMARKS:

 GENERIC PART NUMBER: 723

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
723	VOLT. REGULATOR	BIPOLAR	24-30	4220

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	LM723H	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8008A	CO-60	8	V+=VC=20V

CUM. DOSE (RADS):	O	30K		100K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
D L/RG1-50MA%		-0.11	0.044	-1.17	0.417	-0.18	0.034
D L/RG20-40V %		0.028	0.027	0.027	0.021	0.038	0.024
D REF/V V		0.000	0.001	-0.000	0.002	0.003	0.003

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
723	VOLT REGULATOR	BIPOLAR	24-31	4230

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	LM723HM	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7936	CO-60	8	V+=VC=20V

CUM. DOSE (RADS):	O	30K		100K		300K	
		MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS							
D L/RG1-50MA%		0.003	0.062	-1.09	0.216	-0.048	0.031
D L/RG20-40V %		-0.005	0.009	0.002	0.010	0.008	0.010
D REF/V V		0.002	0.001	0.003	0.001	0.007	0.001

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
723	VOLTAGE REGULATOR	BIPOLAR	9 4310
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	LM723 (10201BIA)		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7804	CO-60	4	VCC=21.5

CUM.DOSE(RADS):	0		50K	
	MEAN	SD	MEAN	SD
PARAMETERS	MEAN	SD	MEAN	SD
V0 RL=INF V	12.01	.0274	12.01	.0285
V0 RL=1.2K V	12.01	.0272	12.01	.0284
VREF V	7.145	.0155	7.147	.0162
STDBY I MA	1.968	.0746	1.954	.0837
V9 RL=1.2K V	13.33	.0336	13.34	.0352
V6 RL=1.2K V	12.02	.0267	12.02	.0283

REMARKS: PACKAGE IS "TO" STYLE CAN.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
723	VOLTAGE REGULATOR	BIPOLAR	1012 5110

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA723		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7906	CO-60	5	V+=VC=20V, V-=GND, VO=CL=CS TO GND VIA 5.1K.

CUM.DOSE(RADS):	0		50K		100K		300K		1MEG	
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
V	7.271	0.014	7.272	0.014	7.273	0.014	7.275	0.014	7.279	0.015
WREF										
LOAD REG	0.48	0.15	1.02	0.38	1.32	0.44	2.42	0.78	4.06	1.27
LINE REG	7.38	0.69	7.76	0.67	8.10	0.54	8.52	0.62	9.36	0.61

REMARKS:

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 GENERIC PART NUMBER: 725
 FUNCTION: OP AMP
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 98 4300

 MANUFACTURER: NS
 PART NUMBER: LM725AH
 SPECIFICATION: WESTINGHOUSE
 DATA SOURCE: WESTINGHOUSE

LDC RAD. TYPE PART QTY. BIAS
 923 CO-60 5 VS=+/-15V

CUM. DOSE (RADS): 0 400K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD
 VIO MV -1.43 .2499 -1.27 .2776
 IIO NA 26.00 5.292 25.20 1.483
 IIB NA 16.40 .9618 13.50 1.225
 F1 KHZ 427.0 52.15 317.0 39.78
 F2 MHZ 1.022 .1357 .8700 .1241

REMARKS:

 GENERIC PART NUMBER: 734
 FUNCTION: VOLTAGE COMPARATOR
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 25-100 4290

 MANUFACTURER: FSC
 PART NUMBER: UA734DM
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS
 7639 CO-60 5 NO INFORMATION FURNISHED.

CUM. DOSE (RADS): 0 13K 52K 170K 360K
 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD
 VIO 5PASS 5PASS 5PASS 5PASS 5PASS
 IB+ 2FAIL 2FAIL 2FAIL 2FAIL 2FAIL
 IB- 2FAIL 4FAIL 1FAIL 1FAIL 1FAIL
 IIO 3FAIL 4FAIL 2FAIL 2FAIL 5FAIL
 ICC 5PASS 5PASS 5PASS 5PASS 5PASS
 IEE 5PASS 5PASS 5PASS 5PASS 5PASS

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
741	OP AMP	BIPOLAR	66	4010

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
INTERSIL	ICL741MTH		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60		

1ST TEST: VS=15V, -15V; 2ND TEST: VS=5V, -5V

PARAMETERS	0		82K		300K		360K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VIO	MV	-1.20	4.50	FAIL	0.0			
IIO	NA	1.70	5.00	FAIL	4.700			
IB	NA	28.00	85.00	FAIL	164.0			
IQ	MA	1.50	1.50	FAIL	1.40			
GBW	KHZ	1115.	1104.	FAIL	1201.			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
741	OP-AMP	BIPOLAR	24-32	4240

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM741F	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
8032	CO-60	7	V+=15V, V=-15V, NONINV-INPUT=5V, INV-INPUT=OUTPUT

CUM.DOSE(RADS): 0

PARAMETERS	0		30K		100K		300K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VOS	MV	-.095	0.056	-.064	0.186	-.447	0.243	
D IOS	NA	-.076	0.187	-.560	0.370	-2.16	1.422	
D IIB	NA	19.00	1.916	60.99	7.356	186.4	22.36	

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 741

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
741	OP-AMP	BIPOLAR	17	4320

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	LM741		MOTOROLA

LDC	RAD. TYPE	PART QTY.	BIAS
7846	CO-60	2	VS=+/-20V, RL=2K, VIN=VO, VIN+=3V

CUM.DOSE(RADS): 0 25K 50K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL	535.5	50.21	378.5	30.41	171.5	54.45		
CMR	92.00	0.000	92.00	0.000	89.00	4.243		
PSRR	100.0	8.485	98.50	4.950	92.00	1.414		
V10	9850	9263	1.420	1.032	2.775	1.379		
IIN	15.70	7071	58.25	15.20	93.50	28.99		
I10	-100	4243	2500	1.768	-1.70	3.253		
ICC	2.000	0707	1.875	0354	1.775	0354		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
741	OP AMP	BIPOLAR	1013	5120

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA741		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7840A	CO-60	4	V+=15V, V-=-15V, VIN=1V(P-P) 1KHZ, RIN=10K, RL=5K *

CUM.DOSE(RADS): 0 10K 20K 50K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL 1KHZ DB	57.88	0.556	57.75	0.569	57.70	0.622	57.10	1.283
AVOL 1HZ DB	114.9	1.219	114.3	1.605	113.5	1.771	**	**
VOS MV	0.895	1.383	1.097	1.412	1.264	1.475	31.88	27.37
IOS	3.153	2.784	3.657	2.970	3.841	3.177	22.40	11.41
IB	-24.1	4.718	-29.2	4.645	-32.8	4.195	-41.8	4.674

REMARKS: **AVOL @ 1HZ WAS NOT TESTED. *RF=100K, NON-INV INPUT TO GND VIA 9.1K.

GENERIC PART NUMBER: 741

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
741	OP AMP	BIPOLAR	1030 5320

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA741AH		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8147	CO-60	5	V+=15V, V--=-15V, VIN=1V(PP)1KHZ, NON-INV. INPUT *

CUM. DOSE (RADS):									
		0		30K		60K		100K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL	1HZ DB	116.4	0.48	106.6	1.32	97.13	5.08	94.37	2.79
VDS	MV	1.349	0.513	2.254	1.509	13.19	19.66	6.97	2.30
IOS	NA	1.082	1.795	6.753	0.777	26.77	25.67	35.87	20.21
IB	NA	22.56	3.171	100.6	19.57	169.5	45.04	266.9	13.12

REMARKS: *VIA 9.1K TO GND, RIN=10K, RF=100K, RL=5K.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
747	OP-AMP	BIPOLAR	24-33 4250

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NATIONAL	LM747F	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7914	CO-60	4	V+=15V, V--=-15V, NONINV-INPUT=5V, INV-INPUT=OUTPUT

CUM. DOSE (RADS):									
		0		30K		100K		300K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
D VDS	MV	-0.064	0.052	-0.438	0.680	-0.842	0.540		
D IOS	NA	0.265	0.394	89.09	124.9	99.29	134.8		
D IID	NA	14.44	7.295	138.8	67.92	324.1	84.63		

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
747	OP-AMP	BIPOLAR	24-34	4260

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TEXAS INST	LM747	COMMERCIAL	ROCKWELL

LDC	RAD. TYPE	PART QTY.	BIAS
7927	CO-60	4	V+=15V, V=-15V, NONINV-INPUT=5V, INV-INPUT=OUTPUT

PARAMETERS	CUM. DOSE (RADS) :															
	0				30K				100K				300K			
	MEAN		SD		MEAN		SD		MEAN		SD		MEAN		SD	
0 VOS																
0 IOS																
0 IIB																

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
747	DUAL OP AMP	BIPOLAR	1031	5330

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA741		TRW

DC	RAD. TYPE	PART QTY.	BIAS
3110	CG-60	15	V+=12V, V--=8V, VIN=1V(PP) 1KHZ. NON-INV INPUT TO *

CUM. DOSE (RADS) :		0		10K		20K		50K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
AVOL	1HZ DB	110.0	4.108	99.93	3.939	94.64	4.387	88.50	5.521
WOS	MV	0.744	0.836	1.727	0.931	2.694	1.346	4.724	2.153
OS	NA	0.640	1.621	3.895	6.391	9.660	13.19	19.29	11.54
EB	NA	41.94	14.27	98.06	27.72	135.9	46.78	292.9	68.22

REMARKS: *GND VIA 9.1K, RIN=10K, RF=100K, RL=5K.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

7520 10 BIT D/A CMOS 68-1 4090

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

UNK. MP7520 IRT CORP

LDC RAD. TYPE PART QTY. BIAS

UNK. C060 5 UNK.

CUM.DOSE(RADS): 0 3.1K 6.1K 11K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

I00(+10V) UA 0.0 0.0 0.0 0.0 0.0 0.0 0.560 .1252
I00(-10V) UA 0.0 0.0 0.0 0.0 0.0 0.0 -.062 .1386
I01(+10V) UA 873.1 30.89 873.2 30.95 872.5 30.89 873.3 30.89
I01(-10V) UA -873. 30.92 -873. 30.94 -873. 30.91 -873. 31.03
(SEE
REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

7520 10 BIT D/A CMOS 68-1 4100

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

UNK. AD7520 IRT CORP

LDC RAD. TYPE PART QTY. BIAS

UNK. C060 5 UNK.

CUM.DOSE(RADS): 0 4K 8K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

I00(+10V) UA 0.0 0.0 .0260 .0321 166.5 363.7
I00(-10V) UA 0.0 0.0 -.012 .0164 -165. 359.7
I01(+10V) UA 752.9 410.9 953.0 40.57 952.7 40.48
I01(-10V) UA -953. 40.45 -953. 40.61 -953. 40.52
(SEE
REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
7520	10 BIT D/A	CMOS	67	4110
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
UNK.	MP7520		IRT CORP	

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	UNK	UNK.

CUM. DOSE(RADS):		0		3.1K		6.1K		11K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I00(+10V) UA		0.0	0.0	0.0	0.0	0.0	0.0	.0560	.1252
I00(-10V) UA		0.0	0.0	0.0	0.0	0.0	0.0	-.062	.1386
I01(+10V) UA		873.1	30.09	873.2	30.09	872.5	30.89	873.3	30.88
I01(-10V) UA		-873.	30.09	-873.	30.09	-873.	30.89	-873.	31.03

(SEE
REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
7520	10 BIT D/A	CMOS	67	4130
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
UNK	AD7520		IRT CORP	

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	UNK	UNK.

CUM. DOSE(RADS):		0		4K		8K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD
I00(+10V) UA		0.0	0.0	.0300	.0300	166.9	363.5
I00(-10V) UA		0.0	0.0	-.030	.0400	-166.	359.4
I01(+10V) UA		952.9	40.48	953.0	40.57	952.7	40.48
I01(-10V) UA		-953.	40.45	-953.	40.61	535.8	154.8

(SEE
REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7520	10-BIT D/A CONVERTR	CMOS	67	4140

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
UNK.	MP7520		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	UNK	UNK.

CUM. DOSE (RADS): 0 3.1K 6.1K 11K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I00(+10V) UA	0.0	0.0	0.0	0.0	0.0	0.0	0.560	1.252
I00(-10V) UA	0.0	0.0	0.0	0.0	0.0	0.0	-0.062	1.1386
I01(+10V) UA	873.1	30.09	873.2	30.90	872.5	30.89	873.3	30.88
I01(-10V) UA	-873.	30.09	-873.	30.90	-873.	30.89	-873.	31.03

(SEE REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7521	12 BIT DIA	CMOS	67-1	4030

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
UNK.	AD7521		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO60	5	UNK.

CUM. DOSE (RADS): 0 4K 8K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD
I00(+10V) UA	0.0	0.0	0.100	0.122	5.282	4.496
I00(-10V) UA	0.0	0.0	0.160	0.207	6.060	4.982
I01(+10V) UA	1135.	241.3	1134.	241.2	1134.	241.4
I01(-10V) UA	-114.	241.3	-11.3	232.2	-113.	241.4

(SEE REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7521	12 BIT D/A	CMOS	67-1	4040

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
UNK.	MP7521		

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.		5	UNK.

CUM. DOSE (RADS): 0 3.7K 8K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I00(+10V) UA	0.0	0.0	0.0	0.0	0.060	.0055		
I00(-10V) UA	0.0	0.0	0.0	0.0	0.0	0.0		
I01(+10V) UA	866.3	29.40	859.9	29.17	865.6	28.88		
I01(-10V) UA	-866.	29.39	-865.	28.83	-866.	28.88		

(SEE REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7521	12-BIT D/A CONVERTER	CMOS	68	4070

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
UNK.	MP7521		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	UNK	UNK.

CUM. DOSE (RADS): 0 3.7K 7.9K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
I00(+10V) UA	0.0	0.0	0.0	0.0	0.060	.0055		
I00(-10V) UA	0.0	0.0	0.0	0.0	0.0	0.0		
I01(+10V) UA	866.0	29.00	865.0	29.00	865.0	28.00		
I01(-10V) UA	-866.	29.00	-865.	29.00	-865.	28.00		

(SEE REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
7521	12 BIT D/A	CMOS	68 4080

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
UNK.	AD7521		IRT CORP

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	CO-60	UNK	UNK.

CUM. DOSE (RADS): 0

PARAMETERS	4K		8K	
	MEAN	SD	MEAN	SD
I00(+10V) UA	0.0	0.0	0.100	0.120
I00(-10V) UA	0.0	0.0	-0.016	0.0210
I01(+10V) UA	1135.	241.3	1134.	241.2
I01(-10V) UA	-113.	241.3	-113.	241.2

(SEE REMARKS)

REMARKS: I00=I(OUT) W/ALL INPUT BITS=0; I01 SIMILAR. (+10V), (-10V) ARE REF V'S.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
7521	12-BIT D/A CONVRTR.	CMOS	1-13 4170

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD7521		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7825	CO-60	2	VDD=15V, VREF=15V

CUM. DOSE (RADS): 0

PARAMETERS	3K		10K		20K		30K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VTHL(MIN) V	1.790		1.550		FAIL		FAIL	
VTHH(MIN) V	1.810		1.770		FAIL		FAIL	
I-LEAKAGE NA	1.715		2.140		1.945		327K	
IDD(MAX) UA	.1485		.1320		65.40		1200	
I1H(MAX) NA	2.06		2.01		2.02		FAIL	
NONLIN(MAX) %	.0172		.0181		.1905		.1467	

REMARKS: MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE) @VDD=15V, VREF=10V.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
7570	10-BIT A/D CONVRTR.	CMOS	1-137 3980

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MPI	MP7570		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7803	CO-60	2	VCC=5V, VDD=15V, VREF=-10V.

CUM. DOSE(RADS):		0		3.0K		6.0K		20.0K		40.0K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ANALOG OUTPUT												
LEAKAGE I												
(MAX) NA	1.100		1.200		0.900		543				FAIL	
I0H (MAX) NA	0.800		1.250		5.80		19.55				FAIL	
I0L (MAX) NA	0.555		1.650		0.500		2.05				FAIL	

REMARKS: MEAN = WORST-CASE PARAM. VALUE (NOT AVG.). *CONTINUED ON REC. 3981.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
7570	10-BIT A/D CONVRTR.	CMOS	1-137 3981

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
MPI	MP7570		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE(RADS):		0		3.0K		6.0K		20.0K		40.0K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IIL (MAX) UA	0.001		0.002		0.002		0.002		0.002		FAIL	
I0H (MAX) UA	.0009		.0010		.0007		.0009		.0009		FAIL	
VOL (MAX) V	0.345		0.341		0.343		0.351		0.351		FAIL	
CLOCK FMAX												
(MIN) KHZ	456		829		814		100		100		FAIL	

REMARKS: CONTINUATION OF RECORD 3980. *CONTINUED ON RECORD 3982.

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

7570 10-BIT A/D CONVRTR. CMOS 1-137 3982

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

MPI MP7570

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 3.0K 6.0K 20.0K 30.0K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

RELATIVE 0.409 0.498 0.569 25.5 FAIL
ACCURACY, 0.751 0.751 0.751 1.751 FAIL
LSB (MAX)
DIFFERENTIAL
NONLIN (MAX) *

REMARKS: CONTINUATION OF RECORD 3981. *CONTINUED ON RECORD 3983.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

7570 10-BIT A/D CONVRTR. CMOS 1-137 3983

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

MPI MP7570

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 3.0K 6.0K 20.0K 30.0K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD MEAN SD

VDH (MIN) V 4.81 4.80 4.79 4.73 FAIL
TON HBE NS 528 590 680 1540 FAIL
TON LBE NS 697 766 873 6000 FAIL
TOFF HBE NS 310 315 330 1860 FAIL
TOFF LBE NS 338 325 330 865 FAIL

REMARKS: CONTINUATION OF RECORD 3982.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7570	10-BIT A/D CONVRTR.	CMOS	1-14	4180

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD7570		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
7844	CD-60	2	VDD=15V, VCC=5V, VREF=-10V.

CUM.DOSE(RADS):						0		3.0K		10.0K		15.0K		20.0K	
						MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
PARAMETERS															

ANALOG OUTPUT						
LEAKAGE I	NA	0.600	0.800	786	8350	FAIL
I LEAKOHMAX	NA	0.600	0.950	5.00	12.5	FAIL
I LEAKOLMAX	NA	0.450	0.500	42.1	77.3	FAIL
IIL (MAX)	UA	.0010	.0013	0.076	0.235	FAIL
I IH (MAX)	UA	0.450	0.500	0.600	0.670	FAIL

REMARKS: MEAN = WORST-CASE PARAMETER VALUE (NOT AVERAGE). *CONT. ON REC. 4181

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7570	10-BIT A/D CONVRTR.	CMOS	1-14	4181

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD7570		

LDC	RAD.	TYPE	PART	QTY.	BIAS
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74	74	74	74	74
75					

[illegible]

RELATIVE ACCURACY, LSB (MAX) DIFFERENTIAL NONLIN.	0.495	0.575	1.030	10.41	FAIL
LSB (MAX)	0.751	0.751	1.751	15.51	FAIL

* REMARKS: CONTINUATION FROM RECORD 4180. *CONTINUED ON RECORD 4182.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7570	10-BIT A/D CONVRTR.	CMOS	1-14	4182

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD7570		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):		0		3.0K		10.0K		15.0K		20.0K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL (MAX)	V	0.093		0.092		0.094		0.099		FAIL	
VCH (MIN)	V	4.930		4.925		4.895		4.840		FAIL	
CLOCK FMAX											
(MIN)	KHZ	576.0		620.0		102.0		126.0		FAIL	
TON HBE	NS	137.0		152.5		260.0		500.0		FAIL	
TON LBE	NS	147.0		160.0		287.0		FAIL		FAIL	

REMARKS: CONTINUATION FROM RECORD 4181. *CONTINUED ON RECORD 4183.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7570	10-BIT A/D CONVRTR.	CMOS	1-14	4183

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
ADI	AD7570		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):		0		3.0K		10.0K		15.0K		20.0K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TOFF HBE	NS	535		542		605		FAIL		FAIL	
TOFF LBE	NS	528		534		568		FAIL		FAIL	
IDD (MAX)	UA	0.009		1.000		625		3000		FAIL	
ICC (MAX)	UA	0.046		0.144		34.6		138		FAIL	
ISK (MIN)	MA	29.9		27.7		27.4		26.4		FAIL	
ISC (MIN)	UA	1.400		1.150		0.545		0.180		FAIL	

REMARKS: CONTINUATION FROM RECORD 4182.

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 GENERIC PART NUMBER: 76

 FUNCTION RF AMPLIFIER
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD
 1-124 4150

 MANUFACTURER MOTOROLA
 PART NUMBER MIC76
 SPECIFICATION JPL
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 4 UNK.

CUM. DOSE (RADS): 0
 30K 75K 150K 600K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 GAIN DB 8.57 8.3 .2380 8.4 .2217 8.4 .2217 8.4 .1826
 BIAS V 2.02 2.02 .0097 2.02 .0096 2.02 .0099 2.02 .0068
 ANGLE DEG 16.5 15.5 1.994 17.5 1.274 19.1 .080 19.1 .377
 IDRAIN MA 3.57 3.6 .0500 3.45 .0816 3.45 .0500 3.4 .0816

REMARKS:

 GENERIC PART NUMBER: 76

 FUNCTION RF AMPLIFIER
 TECHNOLOGY BIPOLAR
 REF. NO. RECORD
 1-125 4160

 MANUFACTURER MOTOROLA
 PART NUMBER MIC76
 SPECIFICATION JPL
 DATA SOURCE

LDC RAD. TYPE PART QTY. BIAS
 NONE 2.5MEV EL 4 UNK.

CUM. DOSE (RADS): 0
 30K 75K 150K 600K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 GAIN DB 8.57 8.3 .1732 8.3 .1258 8.4 .2217 8.4 .1826
 BIAS V 2.02 2.02 .0101 2.02 .0088 2.02 .0102 2.02 .0101
 ANGLE DEG 16.5 15.1 1.664 17.3 .3202 19.1 .080 19.1 .127
 IDRAIN MA 3.57 3.6 .0750 3.5 .0500 3.5 .0500 3.4 .0816

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7602	256 BIT PROM	BIPOLAR	25-101	4270

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
HARRIS	HM1-7602-2		AEROJET

LDC	RAD. TYPE	PART QTY.	BIAS
7894A	CO-60	5	UNK.

CUM. DOSE(RADS): 0

PARAMETERS	13.5K		58.5K		112K		328K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IR	5PASS		5PASS		5PASS		5PASS	
IF	5PASS		5PASS		5PASS		5PASS	
VOL	5PASS		5PASS		5PASS		5PASS	
IOH(E-BAR)	5PASS		5PASS		5PASS		5PASS	
ICC	5PASS		5PASS		5PASS		5PASS	
VCL	5PASS		5PASS		5PASS		5PASS	
(FUNCTIONAL)	5PASS		5PASS		5PASS		5PASS	

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
78	SERIES VOLT REG	BIPOLAR	70	4020

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
	WA78GKC		IRT

LDC	RAD. TYPE	PART QTY.	BIAS
UNK.	UNK	UNK	VIN=15V, RL=60 OHMS, VO=12V, IO=200MA

CUM. DOSE(RADS): 0

PARAMETERS	100K		400K		1M	
	MEAN	SD	MEAN	SD	MEAN	SD
D VO(60-15) V	0.043	0.0210	0.058	0.037	0.055	0.112
D VO(120-15) V	0.057	0.0230	0.087	0.044	0.055	0.112
D VO(120-20) V	0.057	0.0250	0.097	0.039	0.063	0.107
D VO(60-20) V	0.053	0.020	0.085	0.040	0.060	0.110

REMARKS:

 GENERIC PART NUMBER: 7800

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7800	DUAL LEVEL SHIFT	TTL	25-102	4280

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
NSC	DS7800H		AEROJET

LDC RAD. TYPE PART QTY. BIAS

7616 CO-60 4 UNK.

CUM. DOSE (RADS):

0 58.5K 113K 329K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL	4PASS		4PASS		4PASS		4PASS	
II	4PASS		4PASS		4PASS		4PASS	
IL	4PASS		4PASS		4PASS		4PASS	
IIH	4PASS		4PASS		4PASS		4PASS	
IIL	4PASS		4PASS		4PASS		4PASS	
ICGL	4PASS		4PASS		4PASS		4PASS	
ICCH	4PASS		4PASS		4PASS		4PASS	

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
7805	3-TERM POS VOLT REG	BIPOLAR	805-16	600

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA7805		TI

LDC RAD. TYPE PART QTY. BIAS

UNK. CO-60 6 UNK.

CUM. DOSE (RADS):

0 12.5K 25K 50K 100K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
LOAD REG MV	13.33	1.033	28.17	1.607	23.83	1.211	24.42	1.268
VOUT V	5.09	.0369	5.097	.0370	5.102	.0369	5.105	.0370
LINE REG MV	1.167	.1506	1.250	.2106	2.000	.2557	2.583	.2904

REMARKS:

 GENERIC PART NUMBER: 7805

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
7805	VOLTAGE REGULATOR	BIPOLAR	1036	5380

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	UA7805KM		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
F7714	CO-60	5	V+=+10V; PIN 2 @ 5V; CASE @ GND.

CUM.DOSE(RADS): 0

PARAMETERS	100K		300K		500K	
	MEAN	SD	MEAN	SD	MEAN	SD
V0@40V,.5A V	4.942	0.053	4.949	0.052	4.962	0.053
V0@7V,0.5A V	4.942	0.053	4.949	0.052	4.962	0.053
V0@7V,0.1A V	4.961	0.053	4.968	0.052	4.982	0.053
V0@25V,0.1A V	4.961	0.053	4.968	0.052	4.982	0.053
V0@7V,0.8A V	4.928	0.053	4.935	0.052	4.948	0.053
V0@10V,5MA V	4.966	0.053	4.973	0.052	4.987	0.053
V0@10V,.5A V	4.942	0.053	4.949	0.052	4.962	0.053

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
8X300	MICROPROCESSOR	BIPOLAR	501-7	4340

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	8X300		MARTIN

LDC	RAD. TYPE	PART QTY.	BIAS
2469	CO-60	5	UNK.

CUM.DOSE(RADS): 0

PARAMETERS	50K		100K		500K		1M	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TA NS	11.60	1.140	12.20	.8367	12.80	1.643	12.40	1.673
TB NS	13.80	.8367	14.40	1.517	14.20	1.643	14.90	1.746
TC NS	104.0	8.944	120.0	0.0000	122.0	10.96	120.0	14.14
TD NS	4.400	.5477	4.000	0.0000	4.400	.5477	4.500	.5000
TE NS	488.0	2.739	489.0	2.236	487.0	4.472	485.0	5.000

REMARKS: NO PRE RAD DATA AVAILABLE

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
8X300	MICROCONTROLLER	TTL	1106	5860

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	8X300		MARTIN

LDC RAD. TYPE PART QTY. BIAS

2459 CO-60** 5 VCC=+5V

CUM. DOSE (RADS): 0

PARAMETERS	50K		100K		500K		1MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TA NS	11.8	9798	11.6	1.020	12.2	7483	12.8	1.470
MCLK TO LBIN (MAX=35NS)								
TB NS	13.8	7483	13.8	7483	14.4	1.356	14.2	1.470
MCLK TO RBIN (MAX=35NS)								
--PARAMETERS	CONT.	ON	REC	5861.				
REMARKS:	**AND LINAC.							

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
8X300	MICROCONTROLLER	TTL	1106	5861

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	8X300		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0

PARAMETERS	50K		100K		500K		1MEG	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TC NS	116	10.2	104	8.0	120	0.0	122	9.8
MCLK TO IVB5 (MAX=225NS)								
TD NS	4.20	0.400	4.40	0.490	4.00	0.000	4.40	0.490
MCLK TO WCIN CONTROL (MAX=25NS)								
REMARKS:	CONT. FROM REC. 5860. CONT. ON REC. 5862.							

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 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 8X300 MICROCONTROLLER TTL 1106 5862

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 SIGNETICS 8X300

 LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 50K 100K 500K 1MEG

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

CONT. FROM
 RECORD 5861

TE(5) 487 4.000 486 4.899 489 2.000 487 4.000 485 4.472

FUNCTIONALITY SPASS SPASS SPASS SPASS SPASS

REMARKS: (5) TE: MCLK TO WC OUTPUT; SPECIFIED MAX = 525 NS.

 GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

 8021 OP AMP BIPOLAR 25-103 4350

 MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

 INTERSIL ICL8021 AEROJET

 LDC RAD. TYPE PART QTY. BIAS

 20052 CO-60 5 UNK.

CUM.DOSE(RADS): 0 12.5K 42.5K 133K 253K

 PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

 VIO SPASS SPASS SPASS SPASS SPASS
 IB SPAS* SPAS* SPAS* SPAS* SPAS*
 IIO SPAS* SPAS* SPAS* SPAS* SPAS*
 IQ SPAS* SPAS* SPAS* SPAS* SPAS*
 GBW SPAS* SPAS* SPAS* SPAS* SPAS*

REMARKS: *ONE DEVICE HAD IB SLIGHTLY HIGHER THAN SPEC BEFORE AND AFTER IRRAD.

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 GENERIC PART NUMBER: 82S11
 FUNCTION: 1024 X 1 RAM
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 701-2 4330
 82S11

 MANUFACTURER: S82S11F
 PART NUMBER: S82S11F
 SPECIFICATION: AFWL-TR-79-118
 SIGNETICS

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 10 VCC=5V

CUM. DOSE (RADS): 0
 100K 300K 500K 1MEG
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 ICC1 MA 81.90 81.00 79.70 78.90 76.40
 IOL MA 43.10 42.40 41.80 40.90 41.10
 IOH MA 17.40 17.40 17.30 17.20 17.60
 TAC NS 26.00 27.00 26.90 30.40 31.90

REMARKS:

 GENERIC PART NUMBER: 82S181
 FUNCTION: 1024X8 BIPOLAR PROM
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 1058 5600
 82S181

 MANUFACTURER: S82S181
 PART NUMBER: S82S181
 SPECIFICATION: TRW
 SIGNETICS

LDC RAD. TYPE PART QTY. BIAS
 8117A CO-60 + N* 5 VCC=+5V.

CUM. DOSE (RADS): 0 *N+200K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 VOL17 MV 301.4 28.7 303.9 29.6
 VOL16 MV 300.4 13.3 303.9 15.6
 VOL15 MV 294.1 22.5 297.2 24.7
 VOL14 MV 287.7 26.2 291.5 28.4
 VOL13 MV 286.5 14.0 299.7 16.7
 VOL11 MV 286.7 27.4 290.2 29.1
 **

REMARKS: *NEUTRON RAD. = 6.20E11 N/SQCM. **CONTINUED ON RECORD 5601.

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GENERIC PART NUMBER: 82S181

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
82S181	1024X8 BIPOLAR PROM	BIPOLAR	1058	5601

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
SIGNETICS	S82S181		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0 *N+200K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL10	MV	295.3	26.3	298.7	28.8			
VOL9	MV	307.9	20.3	311.7	22.2			

REMARKS: CONTINUATION OF RECORD 5600.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
82S181	1024X8 BIPOLAR PROM	BIPOLAR	1059	5610

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
RAYTHEON	82S181		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8002	CO-60 + N*	5	VCC=+5V.

CUM. DOSE (RADS): 0 *N+200K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL17	MV	223.4	12.93	224.5	11.79			
VOL16	MV	223.2	8.98	225.1	8.45			
VOL15	MV	222.4	13.63	224.2	11.36			
VOL14	MV	222.7	13.97	224.0	11.60			
VOL13	MV	221.8	13.37	222.9	12.76			
VOL11	MV	223.2	11.43	224.8	10.56			

REMARKS: *NEUTRON RAD. = 6.20E11 N/SQCM. **CONTINUED ON RECORD 5611.

GENERIC PART NUMBER: 82S181

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

82S181 1024X8 BIPOLAR PROM BIPOLAR 1059 5611

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

RAYTHEON 82S181

LDC RAD. TYPE PART QTY. BIAS

CUM.DOSE(RADS): 0 N+200K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

*
VOL10 MV 226.2 13.21 228.5 12.15
VOL9 MV 229.3 11.63 231.4 10.47

REMARKS: *CONTINUATION OF RECORD 5610.

GENERIC PART NUMBER FUNCTION TECHNOLOGY REF.NO. RECORD

82S181 1024X8-BIT PROM BIPOLAR 1072 5740

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

SIGNETICS S82S181 TRW

LDC RAD. TYPE PART QTY. BIAS

** CO-60 + N* 5 VCC=+5V.

CUM.DOSE(RADS): 0 *N+100K *N+300K *N+500K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

VOL *** MV 291.3 23.65 305.1 29.23 312.6 29.14 309.0 24.50
VOL *** V 2.931 .0721 2.936 .0721 2.942 .0723 2.952 .0729
-IOS *** MA 29.21 3.096 29.05 3.096 28.96 3.097 28.84 3.098
ILHZO *** PA 222.9 184.3 95.45 310.1 3.025 421.9 45.57 395.9
ILHZI *** NA 1.271 .2685 1.424 .4041 1.260 .4629 1.256 .4962

CONTINUED ... ON REC. 5741
REMARKS: **7901,7909. *NEUTRON RAD.=6.E1N/SOCM. ***AVERAGE OVER 8 PINS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
82S181	1024X8-BIT PROM	BIPOLAR	1072	5741

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
SIGNETICS	S82S181			

LDC	RAD. TYPE	PART QTY.	BIAS	

CUM. DOSE (RADS):		0		N+100K		N+300K		N+500K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IIM *	NA	15.68	5.251	14.16	5.375	12.61	5.517	12.09	5.490
IIH *	NA	.8943	.2684	.9943	.4376	.8907	.5220	.8257	.4612
-IIL *	UA	11.05	1.232	17.73	1.333	24.01	2.759	27.36	1.810
-VIC *	MV	901.7	10.56	913.3	18.56	911.1	20.68	899.8	13.37

REMARKS: CONTINUATION OF RECORD 5740. *AVERAGE OVER 14 PINS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
8211	VOLT. DETECTOR/INDIC	BIPOLAR	6	4360
MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE	
INTERSIL	ICL8211MTY		MOTOROLA	

LDC	RAD. TYPE	PART QTY.	BIAS
7913	CO-60	3	VCC=5V

CUM. DOSE (RADS):		0		3.2K		8K		16K		24K	
PARAMETERS		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IB MAX *	UA	43.66	3.035	41.25	2.143	37.60	1.034	33.32	.4258	28.56	1.164
IC MIN	UA	46.78	2.110	44.97	1.554	41.97	.7234	38.30	.4583	34.56	1.153

REMARKS: NEUTRON FIRST (1.65E12 N/SQCM.). *CURRENT @ PIN 8.

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 GENERIC PART NUMBER: 93L24
 FUNCTION: 5 BIT COMPARATOR
 TECHNOLOGY: TTL
 REF. NO. RECORD: 25-104 4410

 MANUFACTURER: FSC
 PART NUMBER: 93L24DM
 SPECIFICATION: AEROJET
 DATA SOURCE: AEROJET

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO-60 5 UNK.

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD
 VOH 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 VOL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 II 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IIH 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IIL 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 IOS 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 ICC 5PASS 5PASS 5PASS 5PASS 5PASS 5PASS
 REMARKS: TWO LDC: 7622, 1 PC; 7609, 4 PCS.

 GENERIC PART NUMBER: 93L422
 FUNCTION: 256X4 RAM
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 79 4420

 MANUFACTURER: FAIRCHILD
 PART NUMBER: 93L422
 SPECIFICATION: 911916
 DATA SOURCE: HUGHES

LDC RAD. TYPE PART QTY. BIAS
 UNK. CO60 5 VCC=5.5V

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD MEAN SD MEAN SD MEAN SD
 VIL V .1500 .1500 .1000 .1510 .1100
 ICC MA 66.50 66.00 65.00 62.50 59.00

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1060	5620

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
8036B	CO-60 + N*	10	VCC=+5V.

CUM. DOSE (RADS): 0 *N+30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH10	V	3.147	.0507	3.122	.0779			
VOH12	V	3.164	.0471	3.170	.0400			
VOH14	V	3.164	.0431	3.138	.0828			
VOH16	V	3.166	.0417	3.175	.0345			
ILHZ1-10	NA	.8250	.4548	99220	31588			
ILHZ1-12	NA	.7400	.4701	1101	2477			

**

REMARKS: *NEUTRON RAD. = 6.17E11 N/50CM. **CONTINUED ON RECORD 5621.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1060	5621

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS): 0 N+30K

PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ILHZ1-14	UA	.0723	.2270	104.6	37.66			
ILHZ1-16	NA	68.64	215.5	1449	2825			

**

REMARKS: **CONTINUATION FROM RECORD 5620.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1061	5630

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7928	CO-60 + N*	10	VCC=+5V.

CUM. DOSE (RADS):		0		*N*30K	
PARAMETERS	MEAN	SD	MEAN	SD	
VOH10	V	3.102	.0178	2.875	.1710
VOH12	V	3.124	.0179	3.051	.0444
VOH14	V	3.120	.0200	2.895	.1795
VOH16	V	3.120	.0198	3.093	.0676
ILHZ1-10	NA	1.150	.3189	379.0	685.7
ILHZ1-12	NA	.7050	.2872	1.180	.3946

REMARKS: *NEUTRON RAD. = 6.09E11 N/SQCM. **CONTINUED ON RECORD 5631.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1061	5631

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):		0		N*30K	
PARAMETERS	MEAN	SD	MEAN	SD	
ILHZ1-14	NA	.9000	.4230	66.71	46.22
ILHZ1-16	NA	.8950	.4622	1.120	.4832

REMARKS: **CONTINUED FROM RECORD 5630.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1070	5720

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		TRW

LDC	RAD. TYPE	PART QTY.	BIAS
7904	CO-60	5	VCC=+5V.

CUM. DOSE(RADS): 0

PARAMETERS	40K		60K		80K		120K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOL1	293.3	7.32	299.4	7.938	301.4	8.308	303.8	7.855
VOL2	303.9	8.35	306.2	8.467	308.4	8.674	310.2	8.473
VOL3	318.0	9.37	323.7	9.579	325.6	9.735	327.8	9.670
VOL4	323.0	7.11	324.5	7.317	327.0	7.327	328.4	7.313
VOH1	2.742	0.199	2.882	0.610	2.900	1.324	2.942	1.286
VOH2	2.765	0.242	2.760	0.372	2.770	0.410	2.777	0.419

REMARKS: **CONTINUED ON RECORD 5721.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF.NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1070	5721

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		

LDC	RAD. TYPE	PART QTY.	BIAS
-----	-----------	-----------	------

CUM. DOSE(RADS): 0

PARAMETERS	40K		60K		80K		120K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
VOH3	2.765	0.235	2.921	1.744	2.931	1.640	2.964	1.685
VOH4	2.769	0.204	2.786	0.339	2.796	0.372	2.801	0.368
-IOS1	44.65	1.809	44.48	1.900	44.42	1.866	44.31	1.891
-IOS2	44.87	1.611	44.63	1.725	44.59	1.668	44.48	1.685
-IOS3	43.48	1.364	43.35	1.484	43.25	1.448	43.12	1.438
-IOS4	45.79	1.018	45.66	1.122	45.56	1.075	45.46	1.075

REMARKS: CONTINUATION OF RECORD 5720. **CONTINUED ON RECORD 5722.

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 GENERIC PART NUMBER: 93L422
 FUNCTION: 256X4 STATIC RAM
 TECHNOLOGY: TTL
 REF. NO. RECORD: 1070 5722

MANUFACTURER: FAIRCHILD
 PART NUMBER: 93L422
 SPECIFICATION: DATA SOURCE: *****

 IDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0
 40K 60K 80K 120K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 ILHZ01 UA -.001 .0004 30.58 1.928 26.38 2.431 23.05 1.156 -2040 4584.
 ILHZ02 UA .0004 .0004 -.002 .0014 -.002 .0027 -152. 273.3 -5912 4745.
 ILHZ03 UA .0007 .0005 31.65 5.036 29.78 7.311 28.79 7.007 -1173 1792.
 ILHZ04 UA .0007 .0006 -.002 .0011 -.002 .0011 -.007 .0057 -1563 1618.
 **

REMARKS: CONTINUATION OF RECORD 5721. **CONTINUED ON RECORD 5723.

 GENERIC PART NUMBER: 93L422
 FUNCTION: 256X4 STATIC RAM
 TECHNOLOGY: TTL
 REF. NO. RECORD: 1070 5723

MANUFACTURER: FAIRCHILD
 PART NUMBER: 93L422
 SPECIFICATION: DATA SOURCE: *****

 IDC RAD. TYPE PART QTY. BIAS

CUM. DOSE (RADS): 0
 40K 60K 80K 120K
 MEAN SD MEAN SD MEAN SD MEAN SD
 PARAMETERS
 ILHZ11 UA .0004 .0003 125.6 30.83 120.9 39.69 134.6 41.57 160.9 39.37
 ILHZ12 UA .0014 .0004 .0022 .0022 .0014 .0016 .0030 .0014 .0087 .0083
 ILHZ13 UA .0016 .0003 122.4 24.94 118.0 35.03 132.0 38.17 160.5 37.99
 ILHZ14 UA .0014 .0003 .0023 .0015 .0017 .0014 .0028 .0016 .0042 .0011
 ICC MA 69.93 3.402 69.40 3.756 68.99 3.936 68.83 4.016 69.06 4.277
 **

REMARKS: CONTINUATION OF RECORD 5722. **CONTINUED ON RECORD 5724.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1070	5724

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0

PARAMETERS	O		40K		60K		80K		120K		
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	
IIM(4)*	NA	1.36	0.356	1.52	0.947	2.25	0.901	2.65	0.925	2.62	0.776
IIM(3)	NA	2.33	0.546	2.41	1.154	2.55	1.149	2.25	1.429	2.39	1.199
IIM(2)	NA	2.29	0.524	2.49	1.206	2.17	1.118	2.16	1.112	2.22	1.360
IIM(1)	NA	2.22	0.217	2.88	0.516	1.77	0.593	2.17	0.414	2.04	0.687
IIM(5)	NA	1.87	0.532	2.26	1.170	1.72	1.005	1.79	1.248	1.77	1.375
IIM(6)	NA	2.00	0.357	2.45	0.596	1.60	0.582	1.80	0.572	1.79	0.730

REMARKS: CONT. FROM REC. 5723. *()=PIN NUMBER. **CONTINUED ON RECORD 5725.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1070	5725

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		

LDC RAD. TYPE PART QTY. BIAS

CUM. DOSE(RADS): 0

PARAMETERS	O		40K		60K		80K		120K	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
IIM(7)*	1.84	0.195	1.88	0.436	1.91	0.469	1.61	0.717	1.76	0.672
IIM(9)	1.79	0.492	2.35	0.783	1.48	0.694	1.85	0.895	1.70	0.891
IIM(11)	2.00	0.5172	2.35	0.7408	1.74	0.687	1.76	0.953	1.66	0.901
IIM(13)	1.81	0.2535	1.91	0.4533	1.83	0.5209	2.02	0.3966	1.97	0.7373
IIM(21)	1.99	0.4722	2.13	0.7397	2.04	0.7537	1.70	1.037	1.90	0.6411

REMARKS: CONT. FROM REC. 5721. *()=PIN NUMBER. **CONTINUED ON RECORD 5726.

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GENERIC PART NUMBER: 93L422

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93L422	256X4 STATIC RAM	TTL	1070	15726

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93L422		

LDC	RAD. TYPE	PART QTY.	BIAS

CUM. DOSE (RADS):		0		40K		60K		80K		120K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
-IIL*	111.6	7.005	153.7	32.35	135.5	15.27	139.6	17.23	155.6	26.99		
-VIC*	859.5	11.15	858.9	12.17	869.1	12.65	874.3	12.73	879.1	13.59		

REMARKS: CONT. FROM REC. 5724. *AVG. OVER 16 PINS.

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO.	RECORD
93422	256 X 4 RAM	BIPOLAR	501-6	4380

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93422		MARTIN

LDC	RAD. TYPE	PART QTY.	BIAS
7717	CO-60	3	UNK.

CUM. DOSE (RADS):		0		50K		100K		500K		1M		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
TACS NS	20.67	1.528	21.67	.5774	19.67	.5774	17.67	1.155	19.67	.5774		
TZRC NS	17.33	.5774	17.33	2.082	16.33	2.517	16.67	3.055	18.00	2.646		
TAHL NS	27.00	1.000	26.67	1.528	26.00	1.732	27.33	2.309	27.33	3.055		
TAALH NS	27.00	1.000	25.67	1.528	27.67	1.155	23.33	2.517	26.33	2.517		

REMARKS:

GENERIC PART NUMBER: 93422

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 GENERIC PART NUMBER: 93422
 FUNCTION: 256 X 4 RAM
 TECHNOLOGY: BIPOLAR
 REF. NO. RECORD: 501-6 4390

MANUFACTURER: FAIRCHILD
 PART NUMBER: 93422
 SPECIFICATION: MARTIN
 DATA SOURCE: MARTIN

LDC RAD. TYPE PART QTY. BIAS
 7934 CO-60 3 UNK.

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD 50K 100K 500K 1MEG
 TACS NS 21.00 1.000 20.67 5774 21.00 00000 19.67 2.082 20.33 2.309
 TZRCS NS 17.67 1.155 16.33 2.082 17.33 1.528 15.00 3.000 17.67 2.082
 TAAHL NS 25.67 1.528 23.00 1.000 24.33 1.528 23.33 5774 24.33 1.528
 TAAHL NS 24.67 1.528 24.00 2.000 24.00 1.000 23.00 4.583 23.67 1.155

REMARKS:

 GENERIC PART NUMBER: 93422
 FUNCTION: 256X4-BIT RAM
 TECHNOLOGY: TTL
 REF. NO. RECORD: 1105 5850

MANUFACTURER: FAIRCHILD
 PART NUMBER: 93422DMQB
 SPECIFICATION: MARTIN
 DATA SOURCE: MARTIN

LDC RAD. TYPE PART QTY. BIAS
 7934 CO-60** 6 VCC=+5V.

CUM. DOSE (RADS): 0
 PARAMETERS: MEAN SD 50K 100K 500K 1MEG
 FUNCTIONALITY: 6PASS
 TACS *** NS 20.8 1.067 21.2 6872 20.3 7453 18.7 1.700 20.0 1.414
 TZRCS *** NS 17.5 7638 16.8 1.772 15.2 3.131 15.8 2.608 17.8 1.951
 TAA(UP) * NS 26.3 1.247 24.8 2.115 25.2 1.572 25.3 2.427 25.8 2.478
 TAA(DOWN) * NS 25.8 1.572 24.8 1.675 25.8 2.034 16.5 8.180 25.0 2.082

REMARKS: **AND LINAC. ***. *SPECS: *TYP=40NS, MAX=60NS; ***TYP=20NS, MAX=45NS.

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
93425	RAM	TTL	701-1 4430

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
FAIRCHILD	93425DM		AFWL-TR-79-118

LDC	RAD. TYPE	PART QTY.	BIAS
UNK	CO-60	10	VCC=+5V, ALL INPUTS AT GND

CUM. DOSE (RADS):		0		100K		300K		500K		1MEG		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
ICC	MA	101.3		102.6		103.2		101.1		102.9		
IOL	MA	27.20		25.80		23.40		23.30		20.10		
IOH	MA	23.10		17.30		16.40		15.50		17.10		
TAC	NS	20.70		22.30		24.90		25.70		23.00		

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	REF. NO. RECORD
9900	16-BIT MICROPROCESS	IIL	1-141 4370

MANUFACTURER	PART NUMBER	SPECIFICATION	DATA SOURCE
TI	SBP9900		JPL

LDC	RAD. TYPE	PART QTY.	BIAS
NONE	2.5 MEV EL	3	VCC=5V.

CUM. DOSE (RADS):		0		10K		30K		100K		300K		
PARAMETERS	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
MAXIMUM OPERATING FREQUENCY												
	* KHZ	900		850		800		700		FAIL		
	** KHZ	2550		2550		2550		2350		FAIL		

NOTE: X-BAR
 =WORST-CASE

REMARKS: *INJECTION CURRENT = 90MA. **INJECTION CURRENT = 520MA.

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GENERIC PART NUMBER: 9900

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GENERIC PART NUMBER FUNCTION TECHNOLOGY REF. NO. RECORD

9900 MICROPROCESSOR IIL 804 4400

MANUFACTURER PART NUMBER SPECIFICATION DATA SOURCE

TI SBP9900AMJ COMMERCIAL GSFC PPM

LDC RAD. TYPE PART QTY. BIAS

7852 CO-60 5 +5V

CUM. DOSE (RADS): 0 30K

PARAMETERS MEAN SD MEAN SD MEAN SD MEAN SD

FUNCTIONAL PASS FAIL

REMARKS: FUNCTIONAL TEST FROM MIL-M-38510/460 FAIL 18 OR LESS OF 5680 PATTERNS.

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GENERIC PART NUMBER:

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MICROCIRCUIT RADIATION EFFECTS DATABASE
SECTION B: SINGLE EVENT UPSET CROSS SECTIONS
(CYCLOTRON TESTS)

SORT: GENERIC PART TYPE; RECORD ID NUMBER

GENERIC PART NUMBER: 146

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GENERIC PART NUMBER 146
 FUNCTION 4KX1 RAM
 TECHNOLOGY CMOS/SOS
 RECORD 100134

MANUFACTURER RCA
 PART NUMBER TCS146
 SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 0 168MEV 5V 3

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS: CHANNEL OXIDE = 1000 ANGSTROMS

GENERIC PART NUMBER 146
 FUNCTION 4KX1 RAM
 TECHNOLOGY CMOS/SOS
 RECORD 100135

MANUFACTURER RCA
 PART NUMBER TCS146
 SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 60 168MEV 5V 3

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS: CHANNEL OXIDE = 1000 ANGSTROMS

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GENERIC PART NUMBER: 146

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 GENERIC PART NUMBER: 146

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
146	4KX1 RAM		100136

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	TCS146	

LDC: NO. OF PARTS: 3 DATA SOURCE: RCA/AEROSPACE REF.NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	70	168MEV	5V	3	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
	NL
	NE

REMARKS: CHANNEL OXIDE = 1000 ANGSTROMS

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
146	4KX1 RAM		100137

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	TCS146	

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF.NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	45	168MEV	5V	1	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
2.5E-6	2.5E-6
	NL

REMARKS: CHANNEL OXIDE=1000ANGSTROMS

 GENERIC PART NUMBER: 146

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GENERIC PART NUMBER 146
 FUNCTION 4KX1 RAM
 TECHNOLOGY CMOS/SOS
 RECORD 100138

MANUFACTURER RCA
 PART NUMBER TCS146
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION ANGLE 70 ENERGY 80MEV BIAS 5V RUNS 1 FLUENCE
 AR

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS: CHANNEL OXIDE=1000ANGSTROMS

GENERIC PART NUMBER 146
 FUNCTION 4KX1RAM
 TECHNOLOGY CMOS/SOS
 RECORD 100139

MANUFACTURER RCA
 PART NUMBER TCS146
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION ANGLE 30 ENERGY 168MEV BIAS 15V RUNS 1 FLUENCE
 KR

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 4.3E-7 4.3E-7 NL

REMARKS: CHANNEL OXIDE=1000ANGSTROMS

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GENERIC PART NUMBER 146
FUNCTION 4KX1 RAM
TECHNOLOGY CMOS/SOS
RECORD 100140

MANUFACTURER
PART NUMBER
SPECIFICATION
RCA TCS146

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 45 168MEV 5V 1

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
4.7E-6 4.7E-6 NL

REMARKS: CHANNEL OXIDE=1000ANGSTROMS

GENERIC PART NUMBER 146
FUNCTION 4KX1 RAM
TECHNOLOGY CMOS/SOS
RECORD 100141

MANUFACTURER
PART NUMBER
SPECIFICATION
RCA TCS146

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 168MEV 5V 1

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
2.9E-6 2.9E-6 NL

REMARKS: CHANNEL OXIDE=700 ANGSTROMS

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
146	4KX1 RAM	CMOS/SOS	100142

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	TCS146	

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF.NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	45	168MEV	5V	1	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*2.7E-5	*2.7E-5
	NL

REMARKS: CHANNEL OXIDE=700ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
146	4KX1 RAM	CMOS/SOS	100143

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	TCS146	

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF.NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	168MEV	5V	1	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*6.3E-5	*6.3E-5
	NL

REMARKS: CHANNEL OXIDE=700ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

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GENERIC PART NUMBER: 146

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GENERIC PART NUMBER 146
FUNCTION 4KX1 RAM
TECHNOLOGY CMOS/SOS
RECORD 100144

MANUFACTURER RCA
PART NUMBER TCS146
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF.NO.: 11

ION ANGLE 60 ENERGY 168MEV BIAS 10V RUNS 1 FLUENCE
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS: CHANNEL OXIDE=700ANGSTROMS

GENERIC PART NUMBER 146
FUNCTION 4KX1 RAM
TECHNOLOGY
RECORD 100145

MANUFACTURER RCA
PART NUMBER TCS146
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: RCA/AEROSPACE REF.NO.: 11

ION ANGLE 60 ENERGY 168MEV BIAS 5V RUNS 2 FLUENCE
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
* 4.4E-4 * 4.4E-4 NL

REMARKS: CHANNEL OXIDE=850ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER: 146

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ORIGINAL PAGE IS
OF POOR QUALITY

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	TCS146	

LDC: NO. OF PARTS: 2 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	70	168MEV	5V	2	

ERROR CROSS SECTION		LATCH CROSS SECTION		SECTION
MAX	MEAN	MAX	MEAN	
★ 5.3E-4	★ 4.5E-4			NL

REMARKS: CHANNEL OXIDE=850ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
146	4KX1 RAM	CMOS/SOS	100147

MANUFACTURER	PART NUMBER	SPECIFICATION
TCA	TCS146	

NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
CR	45	168MEV	5V	1	

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
* 2.4E-4	* 2.4E-4		NI

REMARKS: CHANNEL OXIDE=850ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER: 146

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GENERIC PART NUMBER 146
 FUNCTION 4KX1 RAM
 TECHNOLOGY CMOS/SDS
 RECORD 100150

MANUFACTURER RCA
 PART NUMBER TCS146
 SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	70	168MEV	10V	2	

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 * 3.6E-4 * 3.2E-4 NL

REMARKS: CHANNEL OXIDE=850ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER 146
 FUNCTION 4KX1 RAM
 TECHNOLOGY CMOS/SDS
 RECORD 100151

MANUFACTURER RCA
 PART NUMBER TCS146
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RCA/AEROSPACE REF. NO.: 11

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	168MEV	10V	1	

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 * 1.6E-4 * 1.6E-4 NL

REMARKS: CHANNEL OXIDE=850ANGSTROMS *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

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GENERIC PART NUMBER 150
FUNCTION 1K RAM
TECHNOLOGY CMOS/SOS
RECORD 100058

MANUFACTURER RCA
PART NUMBER TCS150
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 56MEV 5V 1 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NE NL

REMARKS:

GENERIC PART NUMBER 150
FUNCTION 1K RAM
TECHNOLOGY CMOS/SOS
RECORD 100059

MANUFACTURER RCA
PART NUMBER TCS150 (RAD HARD)
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 56MEV 5V 1 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 1821

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GENERIC PART NUMBER

1821

FUNCTION

1KX1 RAM

TECHNOLOGY

CMOS

RECORD

100077

MANUFACTURER

RCA

PART NUMBER

CDP1821

SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: ROCKWELL/TIROSN REF.NO.: 6

ION ANGLE ENERGY BIAS RUNS FLUENCE

KR 75 152MEV 10V 1 5.8E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

NE NL

REMARKS:

GENERIC PART NUMBER

1821

FUNCTION

1KX1 RAM

TECHNOLOGY

CMOS

RECORD

100078

MANUFACTURER

RCA

PART NUMBER

CDP1821

SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: ROCKWELL/TIROSN REF.NO.: 6

ION ANGLE ENERGY BIAS RUNS FLUENCE

KR 60 152MEV 5V 1 1.4E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

NE NL

REMARKS:

GENERIC PART NUMBER: 1821

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GENERIC PART NUMBER: 1821

GENERIC PART NUMBER	1821	FUNCTION	1KX1 RAM	TECHNOLOGY	CMOS	RECORD	100079
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MANUFACTURER	RCA	PART NUMBER	CDP1821	SPECIFICATION	
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LDC: NO. OF PARTS: 6 DATA SOURCE: ROCKWELL/TIROSN REF.NO.: 6

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	75	152MEV	5V	7	2.3E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
2.E-9	4.E-10
	NL

REMARKS: 1 ERROR IN 1 PART IN 1 RUN

GENERIC PART NUMBER	1821	FUNCTION	1KX1 RAM	TECHNOLOGY	CMOS	RECORD	100080
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MANUFACTURER	RCA	PART NUMBER	CDP1821	SPECIFICATION	
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LDC: NO. OF PARTS: 2 DATA SOURCE: ROCKWELL/TIROSN REF.NO.: 6

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	75	152MEV	3.5V	2	2.9E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
	NE
	NL

REMARKS: BIAS LESS THAN MINIMUM SPEC OPERATING LEVEL

GENERIC PART NUMBER: 1821

GENERIC PART NUMBER 1821
1821
100081
RECORD
FUNCTION 1KX1 RAM
TECHNOLOGY CMOS
MANUFACTURER RCA
PART NUMBER CDP1821
SPECIFICATION

LDC: NO. OF PARTS: 5 DATA SOURCE: ROCKWELL/TIROSN REF.NO.: 6

ION ANGLE ENERGY BIAS RUNS FLUENCE
75 152MEV 2V 5 1.6E6
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
1.E-8 3.E-9 NL

REMARKS: BIAS LESS THAN MINIMUM SPEC OPERATING LEVEL

GENERIC PART NUMBER 1821
1821
100082
RECORD
FUNCTION 1KX1 RAM
TECHNOLOGY CMOS
MANUFACTURER RCA
PART NUMBER CDP1821
SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: ROCKWELL/SAMSO REF.NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
0 150MEV 5V 3 3.8E6
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

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 GENERIC PART NUMBER: 1821

GENERIC PART NUMBER 1821
 FUNCTION 1KX1 RAM
 TECHNOLOGY CMOS
 RECORD 100083

MANUFACTURER RCA
 PART NUMBER CDP1821
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: ROCKWELL/SAMSO REF. NO.: 7

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	150MEV	5V	1	4.1E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

GENERIC PART NUMBER 1821
 FUNCTION 1KX1 RAM
 TECHNOLOGY CMOS
 RECORD 100084

MANUFACTURER RCA
 PART NUMBER CDP1821
 SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: ROCKWELL/SAMSO REF. NO.: 7

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	70	150MEV	5V	3	1.6E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

 GENERIC PART NUMBER: 1821

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GENERIC PART NUMBER: 1821

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GENERIC PART NUMBER 1821
FUNCTION 1KX1 RAM
RECORD 100085

TECHNOLOGY

CMOS

MANUFACTURER RCA
PART NUMBER CDP1821
SPECIFICATION

LDC: NO. OF PARTS: 4 DATA SOURCE: ROCKWELL/SAMSO REF.NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
75 150MEV 5V 14 1.3E7
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
7.E-9 7.E-10 NL

REMARKS:

GENERIC PART NUMBER 1821
FUNCTION 1KX1 RAM
RECORD 100086

TECHNOLOGY

CMOS

MANUFACTURER RCA
PART NUMBER CDP1821
SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: ROCKWELL/SAMSO REF.NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
80 150MEV 5V 4 1.1E7
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
5.E-9 3.E-9 NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 1822

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GENERIC PART NUMBER 1822

FUNCTION 256X4 RAM

RECORD 100087

MANUFACTURER RCA

PART NUMBER CDP1822

SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: ROCKWELL/SAMSO REF. NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 152MEV 5V 2 2.4E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER 1822

FUNCTION 256X4 RAM

RECORD 100088

MANUFACTURER RCA

PART NUMBER CDP1822

SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: ROCKWELL/SAMSO REF. NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 70 152MEV 5V 2 3.9E6

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER 1822
FUNCTION 256X4 RAM
TECHNOLOGY CMDS
RECORD 100089

MANUFACTURER RCA
PART NUMBER CDP1822
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: ROCKWELL/SAMSO REF.NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 75 152MEV 5V 4 3.4E6

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER 1822
FUNCTION 256X4 RAM
TECHNOLOGY CMDS
RECORD 100090

MANUFACTURER RCA
PART NUMBER CDP1822
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: ROCKWELL/SAMSO REF.NO.: 7

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 80 152MEV 5V 2 5.4E6

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER 1824
FUNCTION 32X8 RAM
TECHNOLOGY CMOS
RECORD 100158

MANUFACTURER
PART NUMBER
SPECIFICATION
RCA CDP1824

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 595MEV 10V 7 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER 1824
FUNCTION 32X8 RAM
TECHNOLOGY CMOS
RECORD 100163

MANUFACTURER
PART NUMBER
SPECIFICATION
RCA CDP1824

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 160MEV 10V 3 1.0E10

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 2147
 FUNCTION: 4KX1 RAM
 TECHNOLOGY: NMOS
 RECORD: 100112

MANUFACTURER: INTEL
 PART NUMBER: M2147
 SPECIFICATION:

LDC: NO. OF PARTS: 2 DATA SOURCE: RI/SAMSO REF.NO.: 9

ION ANGLE ENERGY BIAS RUNS FLUENCE
 AR 0 * 5V 14

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 2.1E-6 NL

REMARKS: ENERGY= 14MEV TO 115MEV: STD. DEV.= 7.1E-7

GENERIC PART NUMBER: 244
 FUNCTION: 256X4 RAM
 TECHNOLOGY: CMOS
 RECORD: 100034

MANUFACTURER: RCA
 PART NUMBER: TCC244
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF.NO.: 2

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 0 120MEV 5V 1 4.2E5

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS:

ORIGINAL PAGE IS
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 GENERIC PART NUMBER 244

 FUNCTION 256X4 RAM
 TECHNOLOGY CMOS
 RECORD 100035

 MANUFACTURER RCA
 PART NUMBER TCC244
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION ANGLE ENERGY BIAS RUNS FLUENCE

 KR 50 120MEV 5V 1 2.9E5

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN

 NE NL

REMARKS:

 GENERIC PART NUMBER 244

 FUNCTION 256X4 RAM
 TECHNOLOGY CMOS
 RECORD 100036

 MANUFACTURER RCA
 PART NUMBER TCC244
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION ANGLE ENERGY BIAS RUNS FLUENCE

 KR 70 120MEV 5V 1 3.0E5

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN

 NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER 244
FUNCTION 256X4 RAM
RECORD 100057

TECHNOLOGY

CMOS

MANUFACTURER RCA
PART NUMBER TCC244
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF. NO.: 4

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 130MEV 5V 2 5.6E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NE NL

REMARKS:

GENERIC PART NUMBER 244
FUNCTION 256X4 RAM
RECORD 100060

TECHNOLOGY

CMOS

MANUFACTURER RCA
PART NUMBER TCC244
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 36MEV 5V 1 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
244	256X4 RAM	CMOS	100061

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	TCC244	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	56MEV	5V	1	2.5E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
40160	COUNTER	CMOS	100132

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	40160	

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	120MEV	5V	1	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

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GENERIC PART NUMBER: 40160

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GENERIC PART NUMBER 40160
FUNCTION COUNTER
RECORD 100133

TECHNOLOGY
CMOS

MANUFACTURER FAIRCHILD
PART NUMBER 40160
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: MIT/JPL REF. NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	65	120MEV	5V	3	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

GENERIC PART NUMBER 4018
FUNCTION COUNTER
RECORD 100025

TECHNOLOGY
CMOS

MANUFACTURER RCA
PART NUMBER CD4018
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	60	150MEV	10V	2	1.3E8

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NA	NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 4018

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GENERIC PART NUMBER: 4018
 FUNCTION: COUNTER
 TECHNOLOGY: CMOS
 RECORD: 100026

MANUFACTURER: RCA
 PART NUMBER: CD4018
 SPECIFICATION:

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	120MEV	10V	5	1.7E8

ERROR CROSS SECTION		LATCH CROSS SECTION		
MAX	MEAN	MAX	MEAN	
				NL

REMARKS:

GENERIC PART NUMBER: 4044
 FUNCTION: 4KX1 RAM
 TECHNOLOGY: NMOS
 RECORD: 100113

MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: TMS4044
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/SAMSO REF. NO.: 9

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	0	*	LV	6	

ERROR CROSS SECTION		LATCH CROSS SECTION		
MAX	MEAN	MAX	MEAN	
	7.1E-6			NL

REMARKS: ENERGY= 46MEV TO 115MEV: STD. DEV. = 3.4E-6

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GENERIC PART NUMBER: 4049

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GENERIC PART NUMBER: 4049
FUNCTION: HEX INVERTER
RECORD: 100022

MANUFACTURER: RCA
PART NUMBER: CD4049
SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	60	150MEV	10V	1	3.E7

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
NA			NL

REMARKS:

GENERIC PART NUMBER: 4049
FUNCTION: HEX INVERTER
RECORD: 100023

MANUFACTURER: RCA
PART NUMBER: CD4049
SPECIFICATION:

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	120MEV	10V	6	2.E8

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
NA			NL

REMARKS:

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GENERIC PART NUMBER: 4049

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 GENERIC PART NUMBER: 4049

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
4049	HEX INVERTER	CMOS	100024

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	CD4049	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	120MEV	5V	1	2.8E7

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NA	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
4081	QUAD-2INPUT AND GATE	CMOS	100027

MANUFACTURER	PART NUMBER	SPECIFICATION
RCA	CD4081	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	60	150MEV	10V	1	5.6E7

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NA	NL

REMARKS:

ORIGINAL PAGE IS
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 GENERIC PART NUMBER: 4081

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GENERIC PART NUMBER: 4081

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GENERIC PART NUMBER 4081
FUNCTION QUAD-2INPUT AND GATE
RECORD 100028

MANUFACTURER RCA
PART NUMBER CD4081
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION ANGLE 60 ENERGY 120MEV BIAS 10V RUNS 2 FLUENCE 5.6E7
KR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NA NL

REMARKS:

GENERIC PART NUMBER 4104
FUNCTION 4KX1 RAM
RECORD 100114

MANUFACTURER MOSTEK
PART NUMBER MK4104
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/SAMSO REF. NO.: 9

ION ANGLE 0 ENERGY 105MEV BIAS 5V RUNS 5 FLUENCE
AR

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
2.4E-7 NL

REMARKS: STD. DEV. = 4.1E-8

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GENERIC PART NUMBER: 54LS73

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GENERIC PART NUMBER: 54LS73
 FUNCTION: DUAL JK FLIP-FLOP
 TECHNOLOGY: TTL
 RECORD: 100121

MANUFACTURER: SIGNETICS
 PART NUMBER: 53LS73
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 0 120MEV 5V 6

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 * 2.6E-5 NL

REMARKS: *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER: 54LS95
 FUNCTION: 4BIT SHIFT REGISTER
 TECHNOLOGY: TTL
 RECORD: 100122

MANUFACTURER: SIGNETICS
 PART NUMBER: 54LS95
 SPECIFICATION:

LDC: NO. OF PARTS: 2 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 0 120MEV 5V 2

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 * 6.E-6 NL

REMARKS: *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
54L78	DUAL JK FLIP-FLOP	TTL	100116

MANUFACTURER	PART NUMBER	SPECIFICATION
NATIONAL	DM54L78	

LDC: NO. OF PARTS: 2 DATA SOURCE: MIT/JPL REF.NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	120MEV	5V	4	

ERROR	CROSS SECTION	LATCH	CROSS SECTION	NI
MAX	MEAN	MAX	MEAN	
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REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
54L78	DUAL JK FLIP-FLOP	TTL	100117

MANUFACTURER	PART NUMBER	SPECIFICATION
NATIONAL	DM54L78	

LDC: NO. OF PARTS: 3 DATA SOURCE: MIT/JPL REF. NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	65	120MEV	5V	6	

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
2.4E-5			

REMARKS:

GENERIC PART NUMBER: 5473

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GENERIC PART NUMBER
5473

FUNCTION
DUAL JK FLIP-FLOP

TECHNOLOGY
TTL

RECORD
100127

MANUFACTURER
SIGNETICS

PART NUMBER
5473

SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE

KR 0 120MEV 5V 2

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

NE NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER
5473

FUNCTION
DUAL JK FLIP-FLOP

TECHNOLOGY
TTL

RECORD
100128

MANUFACTURER
SIGNETICS

PART NUMBER
5473

SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE

KR 65 120MEV 5V 6

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

NE NL

REMARKS:

GENERIC PART NUMBER: 5495

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GENERIC PART NUMBER 5495
FUNCTION 4BIT SHIFT REGISTER
RECORD 100126
TECHNOLOGY TTL

MANUFACTURER SIGNETICS
PART NUMBER 5495
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 120MEV 5V 2

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER 6504
FUNCTION 4KX1 RAM
RECORD 100062
TECHNOLOGY CMOS

MANUFACTURER HARRIS
PART NUMBER HA6504
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 56MEV 5V 1 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
TECHNOLOGY CMOS
RECORD 100001

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 5 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 1E3MEV 5V 19 5.4E4

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
* 4.0E-3 9.0E-4

REMARKS: MANY ERRORS: LATCHUP IN ALL PARTS IN ALL RUNS

GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
TECHNOLOGY CMOS
RECORD 100002

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 4 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 40MEV 5V 16 1.3E6

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
1.2E-6 2.0E-7 NL

REMARKS:

GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER: 6508

FUNCTION: 1KX1 RAM
RECORD: 100003
TECHNOLOGY: CMOS

MANUFACTURER: HARRIS

PART NUMBER: HM650B
SPECIFICATION: *****

LDC: NO. OF PARTS: 3 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE

KR 0 20MEV 5V 5 2.5E6

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

NE NL

REMARKS:

GENERIC PART NUMBER: 6508

FUNCTION: 1KX1 RAM
RECORD: 100004
TECHNOLOGY: CMOS

MANUFACTURER: HARRIS

PART NUMBER: HM650B
SPECIFICATION: *****

LDC: NO. OF PARTS: 2 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE

KR 60 20MEV 5V 2 5.6E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

NE NL

REMARKS:

ORIGINAL PAGE IS
OF POOR QUALITY

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 4 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	32MEV	5V	6	3.3E6

ERROR	CROSS SECTION	LATCH	CROSS SECTION
MAX	MEAN	MAX	MEAN
1.5E-7	6.0E-8		NL

REMARKS:

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 4 DATA SOURCE: RI/TIROS(N(6/80) REF.NO.: 1

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	0	210MEV	5V	11	2.9E5

	ERROR	CROSS	SECTION		LATCH	CROSS	SECTION
	MAX		MEAN		MAX		MEAN
	9 OF 6		5.0E-6		1.6E-4		7.E-5

REMARKS: LATCHUP IN ALL PARTS IN 8 RUNS

 GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6508	1KX1 RAM	CMOS	100007

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROSNI(6/80) REF.NO.: 1

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	0	212MEV	5V	2	3.5E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
2.E-8	1.E-8
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6508	1KX1 RAM	(JS	100008

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROSNI(6/80) REF.NO.: 1

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	65	7MEV	5.5V	1	1.7E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
	NE
	NL

REMARKS:

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GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
RECORD 100009

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
AR 0 7MEV 5.5V 1 4 1E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
RECORD 100010

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
AR 65 15MEV 5.5V 1 2.4E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NE

REMARKS:

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GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
RECORD 100013

TECHNOLOGY

CMDS

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
AR 0 34MEV 5V 2 8.4E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
RECORD 100014

TECHNOLOGY

CMDS

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
AR 60 41MEV 5V 2 6.4E4

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
1.E-6 8.E-7 NL

REMARKS:

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GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6508	1KX1 RAM	CMOS	100015

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	60	41MEV	5V	1	6.3E4

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
7.E-7	7.E-7
	NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6508	1KX1 RAM	CMOS	100016

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 4 DATA SOURCE: RI/TIROS(6/80) REF.NO.: 1

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	0	45MEV	5	4	8.8E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
1.2E-6	5.E-7
	NL

REMARKS:

GENERIC PART NUMBER: 6508
 FUNCTION: 1KX1 RAM
 TECHNOLOGY: CMOS
 RECORD: 100017

MANUFACTURER: HARRIS
 PART NUMBER: HM6508
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/TIROSNI(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
 AR 0 67MEV 5V 1 9.2E5

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 5.E-7 NL

REMARKS:

GENERIC PART NUMBER: 6508
 FUNCTION: 1KX1 RAM
 TECHNOLOGY: CMOS
 RECORD: 100018

MANUFACTURER: HARRIS
 PART NUMBER: HM6508
 SPECIFICATION:

LDC: NO. OF PARTS: 2 DATA SOURCE: RI/TIROSNI(6/80) REF.NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
 AR 60 212MEV 5V 3 1.2E4

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 2.E-5 2.E-5 2.E-3 7.E-4

REMARKS: LATCHUP IN ALL PARTS IN ALL RUNS

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GENERIC PART NUMBER: 6508

FUNCTION: 1KX1 RAM
RECORD: 100019

MANUFACTURER: HARRIS
PART NUMBER: HM6508
SPECIFICATION: *****

LDC: NO. OF PARTS: 3 DATA SOURCE: RI/TIROSNI(6/80) REF. NO.: 1

ION ANGLE ENERGY BIAS RUNS FLUENCE
AR 45 212MEV 5V 3 2.1E4

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
3.E-5 2.E-5 3.E-4 2.E-4

REMARKS: LATCHUP IN ALL PARTS IN ALL RUNS

GENERIC PART NUMBER: 6508

FUNCTION: 1KX1 RAM
RECORD: 100029

MANUFACTURER: HARRIS
PART NUMBER: HA6508RH
SPECIFICATION: *****

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 60 120MEV 5V 4 9.E4

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
2.1E-6 1.9E-6 NL

REMARKS: PROTOTYPE RADIATION HARD PROCESS

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GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
RECORD 100030

MANUFACTURER HARRIS
PART NUMBER HA6508
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF.NO.: 2

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 120MEV 5V 2 3.6E5

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS: PROTOTYPE RADIATION HARD PROCESS

GENERIC PART NUMBER 6508
FUNCTION 1KX1 RAM
RECORD 100063

MANUFACTURER HARRIS
PART NUMBER HM6508
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 56MEV 5V 1 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

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GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6508	1KX1 RAM	CMOS	100064

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM6508	

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	56MEV	5V	2	5.E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6508	1KX1 RAM	CMOS	100065

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HS6508RH	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	56MEV	5V	1	2.5E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS:

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GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER: 6508
 FUNCTION: 1KX1 RAM
 TECHNOLOGY: CMOS
 RECORD: 100155

MANUFACTURER: HARRIS
 PART NUMBER: HM1-6508-2
 SPECIFICATION:

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 595MEV 10V 4 1.4E9

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS:

GENERIC PART NUMBER: 6508
 FUNCTION: 1KX1 RAM
 TECHNOLOGY: CMOS
 RECORD: 100160

MANUFACTURER: HARRIS
 PART NUMBER: HS6508RH-2
 SPECIFICATION:

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 595MEV 10V 4 1.8E9

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS:

 GENERIC PART NUMBER: 6508

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GENERIC PART NUMBER: 6508

FUNCTION: 1KX1 RAM

RECORD: 100164

MANUFACTURER: HARRIS

PART NUMBER: HM1-6508-2

SPECIFICATION:

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 160MEV 10V 2 8.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER: 6508

FUNCTION: 1KX1 RAM

RECORD: 100165

MANUFACTURER: HARRIS

PART NUMBER: HS6508RH-2

SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 160MEV 10V 1 4.6E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
NE NL

REMARKS:

GENERIC PART NUMBER: 6551
 FUNCTION: 256X4 RAM
 TECHNOLOGY: CMOS
 RECORD: 100161

MANUFACTURER: HARRIS
 PART NUMBER: HM3-6551-9
 SPECIFICATION: -----

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 595MEV 10V 4 2.8E10

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 ----- NE ----- NL

REMARKS:

GENERIC PART NUMBER: 6551
 FUNCTION: 256X4 RAM
 TECHNOLOGY: CMOS
 RECORD: 100162

MANUFACTURER: HARRIS
 PART NUMBER: HS6551RH-9
 SPECIFICATION: -----

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 595MEV 10V 4 2.6E11

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 ----- NE ----- NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6551	256X4 RAM	CMOS	100166

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HS6551RH	

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF.NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	160MEV	10V	4	3.2E10

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
---	---	---	---
	NE		NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
6551	256X4 RAM	CMOS	100167

MANUFACTURER	PART NUMBER	SPECIFICATION
HARRIS	HM3-6551-9	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (2/82) REF.NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	160MEV	10V	1	3.2E9

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
---	---	---	---
	NE		NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 6605
 FUNCTION: 4KX1 RAM
 TECHNOLOGY: NMOS
 RECORD: 100110

MANUFACTURER: MOTOROLA
 PART NUMBER: MCM6605A
 SPECIFICATION:

LDC: NO. OF PARTS: 3 DATA SOURCE: RI/SAMSO REF. NO.: 9

ION ANGLE ENERGY BIAS RUNS FLUENCE
 AR * * 12V 29

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 4.4E-6 NL

REMARKS: ANGLES= 0 TO 60: ENERGY=30MEV TO 115 MEV: STD.DEV = 9.2E-6

GENERIC PART NUMBER: 6605
 FUNCTION: 4KX1 RAM
 TECHNOLOGY: NMOS
 RECORD: 100111

MANUFACTURER: MOTOROLA
 PART NUMBER: MCM6605A
 SPECIFICATION:

LDC: NO. OF PARTS: 2 DATA SOURCE: RI/SAMSO REF. NO.: 9

ION ANGLE ENERGY BIAS RUNS FLUENCE
 AR 0 * 12V 9

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 5.1E-6 NL

REMARKS: ENERGY= 14MEV TO 105MEV: STD. DEV = 3.2E-6

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GENERIC PART NUMBER: 74LS162
 FUNCTION: COUNTER
 TECHNOLOGY: TTL
 RECORD: 100124

MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: TMS74LS162
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF. NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 0 120MEV 5V 1

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 * 1.2E-5 * 1.2E-5 NL

REMARKS: *ERROR CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER: 74LS95
 FUNCTION: 4BIT SHIFT REGISTER
 TECHNOLOGY: TTL
 RECORD: 100123

MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: TMS74LS95
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF. NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 0 120MEV 5V 1

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 9.8E-6 9.8E-6 NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
74162	COUNTER	TTL	100129

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	74162	

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
---	---	---	---	---	---
KR	65	120MEV	5V	1	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
---	---
NE	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
7495	4BIT SHIFT REGISTER	TTL	100125

MANUFACTURER	PART NUMBER	SPECIFICATION
TEXAS INSTRUMENTS	TMS7495	

LDC: NO. OF PARTS: 2 DATA SOURCE: MIT/JPL REF.NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
---	---	---	---	---	---
KR	0	120MEV	5V	2	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
---	---
3.5E-6	NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER 76L70
FUNCTION 8BIT SHIFT REGISTER
TECHNOLOGY TTL
RECORD 100118

MANUFACTURER NATIONAL
PART NUMBER DM76L70
SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 120MEV 5V 3

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
4.E-6 NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER 76L75
FUNCTION COUNTER
TECHNOLOGY TTL
RECORD 100119

MANUFACTURER NATIONAL
PART NUMBER DM76L75
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
KR 0 120MEV 5V 1

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
1.5E-7 NL

REMARKS:

GENERIC PART NUMBER
 76L75
 FUNCTION
 COUNTER
 TECHNOLOGY
 TTL
 RECORD
 100120

MANUFACTURER
 NATIONAL
 PART NUMBER
 DM76L75
 SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: MIT/JPL REF.NO.: 10

ION ANGLE ENERGY BIAS RUNS FLUENCE
 KR 65 120MEV 5V 6

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 7.9E-7 NL

REMARKS:

GENERIC PART NUMBER
 8X350
 FUNCTION
 256X8 RAM
 TECHNOLOGY
 TTL
 RECORD
 10006\$

MANUFACTURER
 SIGNETICS
 PART NUMBER
 8X350
 SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P 0 56MEV 5V 5 2.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 5.6E-10 1.8E-10 NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 8X350

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
8X350	256X8 RAM	TTL	100067

MANUFACTURER	PART NUMBER	SPECIFICATION	
SIGNETICS	8X350	-----	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	36MEV	5V	1	3.1E8

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
6.5E-11	6.5E-11
	MEAN
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
8X350	256X8 RAM	TTL	100068

MANUFACTURER	PART NUMBER	SPECIFICATION	
SIGNETICS	8X350	-----	

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	26MEV	5V	2	3.1E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
2.7E-11	3.3E-11
	MEAN
	NL

REMARKS:

GENERIC PART NUMBER: 8X350

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 GENERIC PART NUMBER: 8X350

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
8X350	256X8 RAM	TTL	100069

MANUFACTURER	PART NUMBER	SPECIFICATION
SIGNETICS	8X350	

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	18MEV	5V	3	1.E10

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
2.E-13	4.9E-14
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L422	256X4 RAM	TTL	100031

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L422	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF. NO.: 2

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	120MEV	5V	4	6.5E4

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
5.4E-6	4.8E-6
	NL

REMARKS:

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 GENERIC PART NUMBER: 93L422

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GENERIC PART NUMBER 93L422
FUNCTION 256X4 RAM
TECHNOLOGY TTL
RECORD 100032

MANUFACTURER FAIRCHILD
PART NUMBER 93L422
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (1/81) REF.NO.: 2

ION ANGLE 0
ENERGY 120MEV
BIAS 5V
RUNS 4
FLUENCE 2.2E4

ERROR CROSS SECTION
MAX 1.0E-5
MEAN 8.0E-5
LATCH CROSS SECTION
MAX
MEAN
NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER 93L422
FUNCTION 256X4 RAM
TECHNOLOGY TTL
RECORD 100033

MANUFACTURER FAIRCHILD
PART NUMBER 93L422
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF.NO.: 2

ION ANGLE 0
ENERGY 95MEV
BIAS 5.5
RUNS 2
FLUENCE 1.8E4

ERROR CROSS SECTION
MAX 1.3E-5
MEAN 1.2E-5
LATCH CROSS SECTION
MAX
MEAN
NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L422	256X4 RAM	TTL	100043

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L422	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF.NO.: 3

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	200MEV	5V	5	5.E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
7.E-11	4.E-11
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L422	256X4 RAM	TTL	100044

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L422	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF.NO.: 3

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	200MEV	5V	4	4.E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
2.E-11	1.E-11
	NL

REMARKS: DEVICES DELIDDED

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 LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF.NO.: 3

 MANUFACTURER: FAIRCHILD
 PART NUMBER: 93L422
 SPECIFICATION:

 ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 56MEV 5V 4 4.E9

 ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 1.E-10 3.E-11 NL

 REMARKS: DEVICES DELIDDED

 LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF.NO.: 3

 MANUFACTURER: AMD
 PART NUMBER: 93L422
 SPECIFICATION:

 ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 200MEV 5V 3 3.E9

 ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 1.E-10 1.E-10 NL

 REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 93L422

FUNCTION: 256X4 RAM
RECORD: 100047

TECHNOLOGY: TTL

MANUFACTURER: AMD

PART NUMBER: 93L422

SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (1/81) REF.NO.: 3

ION ANGLE ENERGY BIAS RUNS FLUENCE

P+ 0 56MEV 5V 3 3.E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

2.E-10 1.E-10 NL

REMARKS:

GENERIC PART NUMBER: 93L422

FUNCTION: 256X4 RAM
RECORD: 100052

TECHNOLOGY: TTL

MANUFACTURER: FAIRCHILD

PART NUMBER: 93L422

SPECIFICATION:

LDC: NO. OF PARTS: 6 DATA SOURCE: JPL (7/80) REF.NO.: 4

ION ANGLE ENERGY BIAS RUNS FLUENCE

P+ 0 130MEV 5V 32 8.E11

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN

1.5E-11 3.8E-12 NL

REMARKS:

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GENERIC PART NUMBER: 93L422

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GENERIC PART NUMBER 93L422
FUNCTION 256X4 RAM
TECHNOLOGY TTL
RECORD 100053

MANUFACTURER FAIRCHILD
PART NUMBER 93L422
SPECIFICATION

LDC: NO. OF PARTS: 5 DATA SOURCE: JPL (7/80) REF. NO.: 4

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 30MEV 5V 14 3.5E10

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
1.7E-11 7.E-12 NL

REMARKS:

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GENERIC PART NUMBER 93L422
FUNCTION 256X4 RAM
TECHNOLOGY TTL
RECORD 100073

MANUFACTURER FAIRCHILD
PART NUMBER 93L422
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 30MEV 5V 1 6.2E8

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
3.2E-11 3.2E-11 NL

REMARKS:

GENERIC PART NUMBER: 93L422

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 GENERIC PART NUMBER: 93L422

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 GENERIC PART NUMBER 93L422
 FUNCTION 256X4 RAM
 TECHNOLOGY TTL
 RECORD 100074

 MANUFACTURER FAIRCHILD
 PART NUMBER 93L422
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION ANGLE 0 ENERGY 26MEV BIAS 5V RUNS 1 FLUENCE 1.25E9
 P+ 0 26MEV 5V 1 1.25E9

 ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 8E-12 8E-12 NL

REMARKS:

 GENERIC PART NUMBER 93L422
 FUNCTION 256X4 RAM
 TECHNOLOGY TTL
 RECORD 100075

 MANUFACTURER FAIRCHILD
 PART NUMBER 93L422
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION ANGLE 0 ENERGY 18MEV BIAS 5V RUNS 1 FLUENCE 1.25E9
 P+ 0 18MEV 5V 1 1.25E9

 ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 NE NL

REMARKS:

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 GENERIC PART NUMBER: 93L422

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 GENERIC PART NUMBER 93L422
 FUNCTION 256X4 RAM
 TECHNOLOGY TTL
 RECORD 100076

 MANUFACTURER FAIRCHILD
 PART NUMBER 93L422
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE 0
 ENERGY 15MEV
 BIAS 5V
 RUNS 2
 FLUENCE 5.E9

 ERROR CROSS SECTION
 MAX 1.6E-12
 MEAN 1.6E-12
 LATCH CROSS SECTION
 MAX
 MEAN
 NL

REMARKS:

ORIGINAL PAGE 13
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 GENERIC PART NUMBER 93L422
 FUNCTION 256X4 RAM
 TECHNOLOGY TTL
 RECORD 100152

 MANUFACTURER FAIRCHILD
 PART NUMBER 93L422
 SPECIFICATION

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL (2/82) REF.NO.: 12

ION ANGLE 0
 ENERGY 595MEV
 BIAS 10V
 RUNS 13
 FLUENCE 1.3E9

 ERROR CROSS SECTION
 MAX 2.3E-10
 MEAN 1.8E-10
 LATCH CROSS SECTION
 MAX
 MEAN
 NL

REMARKS:

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L422	

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P ⁺		355MEV	10V	8	2.5E9

ERROR CROSS SECTION		LATCH CROSS SECTION		NL
MAX	MEAN	MAX	MEAN	
1.5E-10	1.2E-10			

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L422	256X4 RAM	TTL	100156

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L422	

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
2+	0	160MEV	10V	7	2.3E9

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
6.5-11			NL

REMARKS:

GENERIC PART NUMBER: 93L422

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GENERIC PART NUMBER: 93L422
 FUNCTION: 256X4 RAM
 TECHNOLOGY: TTL
 RECORD: 100168

MANUFACTURER: FAIRCHILD
 PART NUMBER: 931422
 SPECIFICATION: _____

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 26MEV 5V 1 1.25E9

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 3E-11 3E-11

REMARKS: DELIDDED

GENERIC PART NUMBER: 93L422
 FUNCTION: 256X4 RAM
 TECHNOLOGY: TTL
 RECORD: 100169

MANUFACTURER: FAIRCHILD
 PART NUMBER: 931422
 SPECIFICATION: _____

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION ANGLE ENERGY BIAS RUNS FLUENCE
 P+ 0 18MEV 5V 3 7.5E9

ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 4E-12 4E-12

REMARKS: DELIDDED

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***** GENERIC PART NUMBER: 93L425 *****

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L425	1KX1 RAM	TTL	100153

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L425	

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL (2/82) REF.NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	595MEV	10V	11	9.E8

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L425	1KX1 RAM	TTL	100155

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L425	

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (2/82) REF.NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	355MEV	10V	4	1.1E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
1.2E-10	9.9E-11
	NL

REMARKS:

ORIGINAL PAGE IS
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***** GENERIC PART NUMBER: 93L425 *****

 GENERIC PART NUMBER: 93L425

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93L425	1KX1 RAM	TTL	100157

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93L425	

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL (2/82) REF. NO.: 12

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	160MEV	10V	9	4.9E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
7.5E-11	4.1E-11
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93S10	COUNTER	TTL	100130

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93S10	

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF. NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	120MEV	5V	2	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
2.2E-7	
	NL

REMARKS:

 GENERIC PART NUMBER: 93S10

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GENERIC PART NUMBER
 93S10
 FUNCTION
 COUNTER
 TECHNOLOGY
 TTL
 RECORD
 100131

MANUFACTURER
 FAIRCHILD
 PART NUMBER
 93S10
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: MIT/JPL REF.NO.: 10

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	65	200MEV	5V	1	

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
	3.4E-6		NL

REMARKS:

GENERIC PART NUMBER
 93422
 FUNCTION
 256X4 RAM
 TECHNOLOGY
 TTL
 RECORD
 100048

MANUFACTURER
 AMD
 PART NUMBER
 93422
 SPECIFICATION

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (11/80) REF.NO.: 3

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	200MEV	5V	18	1.9E10

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
1.E-10	2.E-11		NL

REMARKS:

ORIGINAL PAGE IS
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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93422	256X4 RAM	TTL	100049

MANUFACTURER	PART NUMBER	SPECIFICATION
AMD	93422	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF. NO.: 3

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	56MEV	5V	3	3.E9

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
2.E-10	2.E-10		NL

REMARKS:

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93422	256X4 RAM	TTL	100070

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93422	

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (7/80) REF. NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	36MEV	5V	4	4.2E9

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
8.5E-12	7.9E-12		NL

REMARKS:

 GENERIC PART NUMBER: 93422

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93422	256X4 RAM	TTL	100071

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93422	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	18MEV	5V	3	5.E9

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
	NE
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93422	256X4 RAM	TTL	100072

MANUFACTURER	PART NUMBER	SPECIFICATION
FAIRCHILD	93422	

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL (7/80) REF.NO.: 5

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	26MEV	5V	4	1.4E10

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
4.7E-12	2.7E-12
	NL

REMARKS:

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 GENERIC PART NUMBER: 93423

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GENERIC PART NUMBER: 93423

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GENERIC PART NUMBER 93423
FUNCTION 1K RAM
TECHNOLOGY TTL
RECORD 100050

MANUFACTURER FAIRCHILD
PART NUMBER 93423
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF.NO.: 3

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ 0 200EV 5V 1 1.E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
2.E-10 2.E-10 NL

REMARKS:

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GENERIC PART NUMBER 93423
FUNCTION 1K RAM
TECHNOLOGY TTL
RECORD 100051

MANUFACTURER FAIRCHILD
PART NUMBER 93423
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL (11/80) REF.NO.: 3

ION ANGLE ENERGY BIAS RUNS FLUENCE
P+ OKL7) V 5V 7 7.E9

ERROR CROSS SECTION LATCH CROSS SECTION
MAX MEAN MAX MEAN
6.E-12 8.E-11 NL

REMARKS:

GENERIC PART NUMBER: 93423

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GENERIC PART NUMBER: 93423

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93423	1K RAM	TTL	100056
MANUFACTURER	PART NUMBER	SPECIFICATION	
FAIRCHILD	93423		

LDC: NO. OF PARTS: 4 DATA SOURCE: JPL (7/80) REF.NO.: 4

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
P+	0	30MEV	5V	12	3.E10

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
5.9E-12	3.5E-12
	MEAN
	NL

REMARKS:

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
93471	4KX1 RAM	TTL	100115
MANUFACTURER	PART NUMBER	SPECIFICATION	
FAIRCHILD	93471		

LDC: NO. OF PARTS: 1 DATA SOURCE: RI/SAMSO REF.NO.: 9

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
AR	0	*	5V	4	

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
	6.6E-6
	MEAN

REMARKS: ENERGY= 14MEV TO 115MEV: STD. DEV. = 1.5E-6

GENERIC PART NUMBER: 9900

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GENERIC PART NUMBER: 9900
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100091

MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9900A
 SPECIFICATION:

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF. NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	144MEV		1	5.E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*8.E-6	*8.E-6
	NL

REMARKS: I(INJ)=604MA; F=3MHZ * CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER: 9900
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100092

MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9900A
 SPECIFICATION:

LDC: NO. OF PARTS: 3 DATA SOURCE: JPL/RI/NWSC REF. NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	144MEV		3	1.6E7

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*1.3E-5	*1.2E-5
	NL

REMARKS: I(INJ)=500MA; F=3MHZ * CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
9900	MICROPROCESSOR	IIL	100093

MANUFACTURER	PART NUMBER	SPECIFICATION
TEXAS INSTRUMENTS	SBP9900A	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF. NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	144MEV		1	4.8E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*1.E-5	*1.E-5
	NL

REMARKS: I(INJ)=507MA: F=.3MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP. NOT PER BIT

GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
9900	MICROPROCESSOR	IIL	100094

MANUFACTURER	PART NUMBER	SPECIFICATION
TEXAS INSTRUMENTS	SBP9900A	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF. NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	0	144MEV		1	4.9E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*8.1E-6	*8.1E-6
	NL

REMARKS: I(INJ)=98MA: F=.3MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP. NOT PER BIT

ORIGINAL PAGE IS
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 GENERIC PART NUMBER: 9900
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100095

 MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9900A
 SPECIFICATION: *****

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	45	144MEV		1	1.9E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*2.7E-5	*2.7E-5
	NL

REMARKS: 1(INJ)=500MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

 GENERIC PART NUMBER: 9900
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100096

 MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9900A
 SPECIFICATION: *****

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	144MEV		3	7.8E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*4.8E-5	*3.2E-5
	NL

REMARKS: 1(INJ)=500MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

ORIGINAL PAGE IS
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GENERIC PART NUMBER: 9900

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GENERIC PART NUMBER 9900
FUNCTION MICROPROCESSOR
RECORD 100097

TECHNOLOGY IIL

MANUFACTURER TEXAS INSTRUMENTS
PART NUMBER SBP9900A
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF. NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	75	102MEV		1	1.6E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS: I(INJ)=500MA: F=3.MHZ

GENERIC PART NUMBER 9900
FUNCTION MICROPROCESSOR
RECORD 100098

TECHNOLOGY IIL

MANUFACTURER TEXAS INSTRUMENTS
PART NUMBER SBP9900A
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF. NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	80	102MEV		1	1.2E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
NE	NL

REMARKS: I(INJ)=500MA: F=3.MHZ

GENERIC PART NUMBER: 9900

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GENERIC PART NUMBER 9900
FUNCTION MICROPROCESSOR
TECHNOLOGY IIL
RECORD 100099

MANUFACTURER TEXAS INSTRUMENTS
PART NUMBER SBP9900A
SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION ANGLE 80 ENERGY 102MEV BIAS RUNS 1 FLUENCE 1.2E6

ERROR CROSS SECTION MAX MEAN LATCH CROSS SECTION MAX MEAN
NE NL

REMARKS: I(INJ)=500MA: F=3MHZ

GENERIC PART NUMBER 9989
FUNCTION MICROPROCESSOR
TECHNOLOGY IIL
RECORD 100100

MANUFACTURER TEXAS INSTRUMENTS
PART NUMBER SBP9989
SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION ANGLE 0 ENERGY 144MEV BIAS RUNS 2 FLUENCE 8.3E6

ERROR CROSS SECTION MAX MEAN LATCH CROSS SECTION MAX MEAN
*1.2E-4 *6.8E-5 NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

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 GENERIC PART NUMBER: 9989

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 GENERIC PART NUMBER 9989
 FUNCTION MICROPROCESSOR
 TECHNOLOGY IIL
 RECORD 100101

 MANUFACTURER TEXAS INSTRUMENTS
 PART NUMBER SBP9989
 SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION ANGLE 60 ENERGY 144MEV BIAS RUNS 2 FLUENCE 3.9E5
 KR

 ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 *3.6E-4 *2.6E-4 NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

 GENERIC PART NUMBER 9989
 FUNCTION MICROPROCESSOR
 TECHNOLOGY IIL
 RECORD 100102

 MANUFACTURER TEXAS INSTRUMENTS
 PART NUMBER SBP9989
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION ANGLE 60 ENERGY 144MEV BIAS RUNS 1 FLUENCE 5.7E5
 KR

 ERROR CROSS SECTION LATCH CROSS SECTION
 MAX MEAN MAX MEAN
 *1.8E-4 *1.8E-4 NL NL

REMARKS: I(INJ)=400MA: F=.3MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

 GENERIC PART NUMBER: 9989

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 GENERIC PART NUMBER: 9989
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100103

 MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9989
 SPECIFICATION: *****

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NW5C REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
KR	60	144MEV		1	1.9E5

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*2.6E-4	*2.6E-4
	NL

REMARKS: I(INU)=90MA: F=.3MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

 GENERIC PART NUMBER: 9989
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100104

 MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9989
 SPECIFICATION: *****

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NW5C REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	0	102MEV		1	5.6E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*3.6E-7	*3.6E-7
	NL

REMARKS: I(INU)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

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 GENERIC PART NUMBER 9989
 FUNCTION MICROPROCESSOR
 TECHNOLOGY IIL
 RECORD 100105

 MANUFACTURER TEXAS INSTRUMENTS
 PART NUMBER SBP9989
 SPECIFICATION

LDC: NO. OF PARTS: 2 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	80	102MEV		2	1.4E7

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
*1.5E-5	*1.4E-5		NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

 GENERIC PART NUMBER 9989
 FUNCTION MICROPROCESSOR
 TECHNOLOGY IIL
 RECORD 100106

 MANUFACTURER TEXAS INSTRUMENTS
 PART NUMBER SBP9989
 SPECIFICATION

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	0	102MEV		1	5.4E6

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
*5.6E-7	*5.6E-7		NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP NOT PER BIT

ORIGINAL PAGE IS
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 GENERIC PART NUMBER: 9989
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100107

 MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9989
 SPECIFICATION: *****

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	60	102MEV		1	2.1E6

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
*2.4E-6	*2.4E-6		NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

 GENERIC PART NUMBER: 9989
 FUNCTION: MICROPROCESSOR
 TECHNOLOGY: IIL
 RECORD: 100108

 MANUFACTURER: TEXAS INSTRUMENTS
 PART NUMBER: SBP9989
 SPECIFICATION: *****

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	70	102MEV		1	9.2E5

ERROR CROSS SECTION		LATCH CROSS SECTION	
MAX	MEAN	MAX	MEAN
*1.3E-5	*1.3E-5		NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

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 OF POOR QUALITY

GENERIC PART NUMBER: 9989

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GENERIC PART NUMBER	FUNCTION	TECHNOLOGY	RECORD
9989	MICROPROCESSOR	III	100109

MANUFACTURER	PART NUMBER	SPECIFICATION
TEXAS INSTRUMENTS	SBP9989	

LDC: NO. OF PARTS: 1 DATA SOURCE: JPL/RI/NWSC REF.NO.: 8

ION	ANGLE	ENERGY	BIAS	RUNS	FLUENCE
0	75	102MEV		1	1.E6

ERROR CROSS SECTION	LATCH CROSS SECTION
MAX	MAX
MEAN	MEAN
*5.9E-6	*5.9E-6
	NL

REMARKS: I(INJ)=400MA: F=3.MHZ *CROSS SEC. IN ERRORS/PARTICLE/CHIP, NOT PER BIT

GENERIC PART NUMBER: 9989

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